



# Open Source Used In collectorless\_sdwan 3.0.1

## Cisco Systems, Inc.

www.cisco.com

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco website at www.cisco.com/go/offices.

Text Part Number: 78EE117C99-1430052821

This document contains licenses and notices for open source software used in this product. With respect to the free/open source software listed in this document, if you have any questions or wish to receive a copy of any source code to which you may be entitled under the applicable free/open source license(s) (such as the GNU Lesser/General Public License), please contact us at external-opensource-requests@cisco.com.

In your requests please include the following reference number 78EE117C99-1430052821

# **Contents**

1.1 pluggy 1.0.0
1.1.1 Available under license
1.2 tomli 2.0.1
1.2.1 Available under license
1.3 ordered-set 4.0.2
1.3.1 Available under license
1.4 pyrsistent 0.18.1
1.4.1 Available under license
1.5 python-pip 22.1.1
1.5.1 Available under license
1.6 ncurses 6.3_p20220521-r0
1.6.1 Available under license
1.7 py3-tomli 2.0.1-r1
1.7.1 Available under license
1.8 urllib3 1.26.7
1.8.1 Available under license
1.9 musl 1.2.3-r0
1.9.1 Available under license
1.10 rich 11.0.0
1.10.1 Available under license
1.11 alpine-baselayout 3.2.0-r23
1.11.1 Available under license
1.12 pyyaml 5.4.1
1.12.1 Available under license
1.13 xz 5.2.5-r1
1.13.1 Available under license

# 1.14 click-default-group 1.2.2 1.14.1 Available under license 1.15 more-itertools 8.13.0 1.15.1 Available under license **1.16 async-timeout 4.0.2** 1.16.1 Available under license 1.17 iniconfig 1.1.1 1.17.1 Available under license 1.18 click 8.1.3 1.18.1 Available under license 1.19 msgpack 1.0.4 1.19.1 Available under license 1.20 scp 0.14.4 1.20.1 Available under license 1.21 wheel 0.37.0 1.21.1 Available under license 1.22 py 1.11.0 1.22.1 Available under license 1.23 py3-setuptools 59.4.0-r0 1.23.1 Available under license 1.24 py3-packaging 21.3-r0

1.24.1 Available under license

## 1.25 py3-six 1.16.0-r1

1.25.1 Available under license

#### 1.26 idna 15.0.0

1.26.1 Available under license

# 1.27 aiohttp 3.8.1

1.27.1 Available under license

# 1.28 pax-utils 1.3.4-r0

1.28.1 Available under license

# 1.29 tenacity 8.0.1

1.29.1 Available under license

# 1.30 expat 2.4.9-r0

1.30.1 Available under license

#### 1.31 pytest-asyncio 0.15.1

1.31.1 Available under license

#### 1.32 bridgeutils 1.7.1-r0

1.32.1 Available under license

# 1.33 apipkg 2.0.0

1.33.1 Available under license
1.34 pyyaml 5.4.1-1.ph4
1.34.1 Available under license
1.35 urllib3 1.26.12
1.35.1 Available under license
1.36 alpine-baselayout 3.2.0-r22
1.36.1 Available under license
1.37 frozenlist 1.3.1
1.37.1 Available under license
1.38 openssl 1.1.1q-r0
1.38.1 Available under license
1.39 futures 3.4.0
1.39.1 Available under license
1.40 attrs 21.4.0
1.40.1 Available under license
1.41 packaging 21.3
1.41.1 Available under license
1.42 chardet 4.0.0

1.47.1 Available under license

1.46.1 Available under license

1.48 cryptography 38.0.1

1.46 py3-appdirs 1.4.4-r3

1.49 python-pip 22.0.4

1.49.1 Available under license

1.48.1 Available under license

1.50 pep517 0.12.0

1.47 tre 0.8.0

1.50.1 Available under license

1.51 python-certifi 2022.09.24

1.51.1 Available under license

1.52 pcre 10.40-r0

1.52.1 Available under license

# 1.53 urllib3 1.26.6-1.ph1 1.53.1 Available under license 1.54 doteny-linter 0.3.0 1.54.1 Available under license 1.55 colorama 0.4.4 1.55.1 Available under license 1.56 visual-studio-runtime 14.00.24210.0 1.56.1 Available under license 1.57 py3-pip 22.1.1-r0 1.57.1 Available under license 1.58 cffi 1.15.1 1.58.1 Available under license 1.59 pynacl 1.5.0 1.59.1 Available under license 1.60 urllib3 1.26.9 1.60.1 Available under license 1.61 py3-contextlib 21.6.0-r2 1.61.1 Available under license 1.62 pyparsing 2.4.7 1.62.1 Available under license 1.63 sqlite 3.38.5-r0 1.63.1 Available under license 1.64 retrying 1.3.3 1.64.1 Available under license 1.65 python-setuptools 60.6.0 1.65.1 Available under license 1.66 mpdecimal 2.5.1-r1 1.66.1 Available under license 1.67 bcrypt 3.2.0 1.67.1 Available under license 1.68 pytest 6.2.5 1.68.1 Available under license 1.69 msgpack 1.0.3 1.69.1 Available under license 1.70 python-dotenv 0.19.0 1.70.1 Available under license

1.71 isonschema 3.2.0

1.72.1 Available under licens	e
1.73 importlib-metadata 4.4	

1.73.1 Available under license

#### 1.74 charset-normalizer 2.0.12

1.74.1 Available under license

# 1.75 attrs 22.1.0

1.75.1 Available under license

#### 1.76 urllib3 1.26.10

1.76.1 Available under license

# 1.77 pycparser 2.21

1.77.1 Available under license

# 1.78 pyyaml 6.0

1.78.1 Available under license

#### 1.79 html5lib 1.1

1.79.1 Available under license

#### 1.80 distro 1.7.0

1.80.1 Available under license

#### 1.81 colorama 0.4.5

1.81.1 Available under license

# 1.82 py3-retrying 1.3.3-r3

1.82.1 Available under license

#### 1.83 wheel 0.37.1

1.83.1 Available under license

#### 1.84 python-setuptools 59.4.0

1.84.1 Available under license

#### 1.85 python-certifi 2021.10.08

1.85.1 Available under license

#### 1.86 py3-pep 0.12.0-r2

1.86.1 Available under license

#### 1.87 chardet 5.0.0

1.87.1 Available under license

#### 1.88 python-setuptools 65.4.0

1.88.1 Available under license

## 1.89 python 3.10.5-r0

1.89.1 Available under license

#### 1.90 paramiko 2.11.0

1.90.1 Available under license

#### 1.91 jsonschema 4.16.0

1.91.1 Available under license

# 1.92 idna 3.4

1.92.1 Available under license

# 1.93 python-setuptools 58.1.0

1.93.1 Available under license

#### 1.94 futures 3.3.0

1.94.1 Available under license

#### 1.95 libffi 3.4.2-r1

1.95.1 Available under license

## 1.96 python-requests 2.26.0

1.96.1 Available under license

#### 1.97 ply 3.11

1.97.1 Available under license

#### 1.98 nghttp2 1.47.0-r0

1.98.1 Available under license

# 1.99 aiosignal 1.2.0

1.99.1 Available under license

# 1.100 py3-parsing 2.4.7-r3

1.100.1 Available under license

## 1.101 cpp 11.2.1\_git20220219-r5

1.101.1 Available under license

#### 1.102 zlib 1.2.12

1.102.1 Available under license

#### 1.103 importlib-resources 4.4

1.103.1 Available under license

#### 1.104 bzip2 1.0.8-r2

1.104.1 Available under license

## 1.105 yarl 1.8.1

1.105.1 Available under license

#### 1.106 python-requests 2.28.1

1.106.1 Available under license

#### 1.107 busybox 1.35.0-r17

1.107.1 Available under license

#### 1.108 bcrypt 4.0.0

1.108.1 Available under license

# 1.109 py3-ordered-set 4.0.2-r3

1.109.1 Available under license

# 1.110 webencodings 0.5.1

1.110.1 Available under license

#### 1.111 contextlib2 21.6.0

1.111.1 Available under license
1.112 py3-more-itertools 8.13.0-r0
1.112.1 Available under license
1.113 multidict 6.0.2
1.113.1 Available under license
1.114 python-certifi 2022.06.15
1.114.1 Available under license
1.115 brotli 1.0.9-r6
1.115.1 Available under license
1.116 readline 8.1.2-r0
1.116.1 Available under license
1.117 git 2.36.2-r0
1.117.1 Available under license
1.118 libffi 3.4.2-r1
1.118.1 Available under license
1.119 cython 0.29.32
1.119.1 Available under license
1.120 typing-extensions 4.3.0
1.120.1 Available under license
1.121 curl 7.83.1-r3
1.121.1 Available under license
1.122 python-requests 2.27.1
1.122.1 Available under license
1.123 alpine-keys 2.4-r1
1.123.1 Available under license
1.124 toml 0.10.2
1.124.1 Available under license
1.125 ca-certificates 20220614-r0
1.125.1 Available under license
1.126 packaging 21.2
1.126.1 Available under license
1.127 python-certifi 2022.9.24
1.127.1 Available under license
1.128 pysftp 0.2.9
1.128.1 Available under license
1.129 libsodium 1.5.0
1.129.1 Available under license
1.130 idna 14.0.0
1.130.1 Available under license

#### 1.131 zlib 1.2.12-r3

1.131.1 Available under license

#### 1.132 openssl 3.0.5

1.132.1 Available under license

# 1.1 pluggy 1.0.0

# 1.1.1 Available under license:

The MIT License (MIT)

Copyright (c) 2015 holger krekel (rather uses bitbucket/hpk42)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.2 tomli 2.0.1

# 1.2.1 Available under license:

MIT License

Copyright (c) 2021 Taneli Hukkinen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all

copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.3 ordered-set 4.0.2

# 1.3.1 Available under license:

Copyright (c) 2018 Luminoso Technologies, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.4 pyrsistent 0.18.1

# 1.4.1 Available under license:

Copyright (c) 2022 Tobias Gustafsson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.5 python-pip 22.1.1

# 1.5.1 Available under license:

Copyright (c) 2007 Ian Bicking and Contributors Copyright (c) 2009 Ian Bicking, The Open Planning Project Copyright (c) 2011-2013 The virtualenv developers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. The MIT License (MIT)

Copyright (c) 2017 Thomas Kluyver

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is

furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (C) 2016 Jason R Coombs < jaraco@jaraco.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# This is the MIT license

Copyright (c) 2010 ActiveState Software Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. Copyright (c) 2020 Will McGugan

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2010-2020 Benjamin Peterson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies

of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

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

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

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

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

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

# GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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

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

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

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

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

1. You may copy and distribute verbatim copies of the Library's

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

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

- 2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) The modified work must itself be a software library.
  - b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
  - c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
  - d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

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

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

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

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

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

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

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

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

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

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

However, linking a "work that uses the Library" with the Library

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

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

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

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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

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

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the

Library will not necessarily be able to recompile the application to use the modified definitions.)

- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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

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

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the

Sections above.

- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.
- 11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

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

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

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

- 12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.

EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

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

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

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

You should have received a copy of the GNU Lesser General Public

License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

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

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

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

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it! Copyright (c) 2010 Jonathan Hartley All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holders, nor those of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License
Version 2.0, January 2004
http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works

that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A

PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

# END OF TERMS AND CONDITIONS MIT License

Copyright (c) 2021 Taneli Hukkinen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE

#### SOFTWARE.

Copyright (c) 2018, Tzu-ping Chung <uranusjr@gmail.com>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made under the terms of \*both\* these licenses.

Pylons Project Contributor Agreement

\_\_\_\_\_

The submitter agrees by adding his or her name within the section below named "Contributors" and submitting the resulting modified document to the canonical shared repository location for this software project (whether directly, as a user with "direct commit access", or via a "pull request"), he or she is signing a contract electronically. The submitter becomes a Contributor after a) he or she signs this document by adding their name beneath the "Contributors" section below, and b) the resulting document is accepted into the canonical version control repository.

#### Treatment of Account

-----

Contributor will not allow anyone other than the Contributor to use his or her username or source repository login to submit code to a Pylons Project source repository. Should Contributor become aware of any such use, Contributor will immediately by notifying Agendaless Consulting.

Notification must be performed by sending an email to webmaster@agendaless.com. Until such notice is received, Contributor will be presumed to have taken all actions made through Contributor's account. If the Contributor has direct commit access, Agendaless Consulting will have complete control and discretion over capabilities assigned to Contributor's account, and may disable Contributor's account for any reason at any time.

Legal Effect of Contribution

Upon submitting a change or new work to a Pylons Project source Repository (a "Contribution"), you agree to assign, and hereby do assign, a one-half

interest of all right, title and interest in and to copyright and other intellectual property rights with respect to your new and original portions of the Contribution to Agendaless Consulting. You and Agendaless Consulting each agree that the other shall be free to exercise any and all exclusive rights in and to the Contribution, without accounting to one another, including without limitation, the right to license the Contribution to others under the Repoze Public License. This agreement shall run with title to the Contribution. Agendaless Consulting does not convey to you any right, title or interest in or to the Program or such portions of the Contribution that were taken from the Program. Your transmission of a submission to the Pylons Project source Repository and marks of identification concerning the Contribution itself constitute your intent to contribute and your assignment of the work in accordance with the provisions of this Agreement.

#### License Terms

-----

Code committed to the Pylons Project source repository (Committed Code) must be governed by the Repoze Public License (http://repoze.org/LICENSE.txt, aka "the RPL") or another license acceptable to Agendaless Consulting. Until Agendaless Consulting declares in writing an acceptable license other than the RPL, only the RPL shall be used. A list of exceptions is detailed within the "Licensing Exceptions" section of this document, if one exists.

Representations, Warranty, and Indemnification

-----

Contributor represents and warrants that the Committed Code does not violate the rights of any person or entity, and that the Contributor has legal authority to enter into this Agreement and legal authority over Contributed Code. Further, Contributor indemnifies Agendaless Consulting against violations.

#### Cryptography

-----

Contributor understands that cryptographic code may be subject to government regulations with which Agendaless Consulting and/or entities using Committed Code must comply. Any code which contains any of the items listed below must not be checked-in until Agendaless Consulting staff has been notified and has approved such contribution in writing.

- Cryptographic capabilities or features
- Calls to cryptographic features
- User interface elements which provide context relating to cryptography

Notices	
Contributor confirms that any notices required will be included in any Committed Code.	
Licensing Exceptions ====================================	
None.	
List of Contributors ====================================	
List of Contributors	

- Code which may, under casual inspection, appear to be cryptographic.

The below-signed are contributors to a code repository that is part of the project named "Translationstring". Each below-signed contributor has read, understands and agrees to the terms above in the section within this document entitled "Pylons Project Contributor Agreement" as of the date beside his or her name.

Contributors

-----

- Chris McDonough, 2011/02/16
- Wichert Akkerman, 2012/02/02

Copyright (c) 2012 by Simon Sapin.

Some rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The names of the contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS

"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

	Release	Deriv	rea Ye	ar Owi	ier GPL-	
from			com	compatible? (1)		
					•	
	0.9.0 thru	1.2	1991-	1995 CW	I yes	
	1.3 thru 1.	5.2 1.2	1995	5-1999 CN	NRI yes	
	1.6	1.5.2	2000	CNRI	no	
	2.0	1.6	2000	BeOpen.	com no	
	1.6.1	1.6	2001	CNRI	yes (2)	
	2.1	2.0+1.6	.1 2001	PSF	no	
	2.0.1	2.0+1.6	5.1 2001	PSF	yes	
	2.1.1	2.1+2.0	0.1 2001	PSF	yes	

2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-20	003 PSF	yes
2.3.1	2.3	2002-20	003 PSF	yes
2.3.2	2.3.1	2002-2	003 PSF	yes
2.3.3	2.3.2	2002-2	003 PSF	yes
2.3.4	2.3.3	2004	PSF	yes
2.3.5	2.3.4	2005	PSF	yes
2.4	2.3	2004	PSF	yes
2.4.1	2.4	2005	PSF	yes
2.4.2	2.4.1	2005	PSF	yes
2.4.3	2.4.2	2006	PSF	yes
2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
2.7	2.6	2010	PSF	yes

#### Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

#### B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

#### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2.

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

-----

#### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.
- 7. By copying, installing or otherwise using the software, Licensee

agrees to be bound by the terms and conditions of this License Agreement.

#### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

**ACCEPT** 

### CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

\_\_\_\_\_

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT

# OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. Apache License

Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License.

You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov 3 19:04:19 2011#

This is a bundle of X.509 certificates of public Certificate Authorities

(CA). These were automatically extracted from Mozilla's root certificates

file (certdata.txt). This file can be found in the mozilla source tree:

http://mxr.mozilla.org/mozilla/source/security/nss/lib/ckfw/builtins/certdata.txt?raw=1#

It contains the certificates in PEM format and therefore

can be directly used with curl / libcurl / php\_curl, or with

an Apache+mod\_ssl webserver for SSL client authentication.

Just configure this file as the SSLCACertificateFile.#

\*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at http://mozilla.org/MPL/2.0/.

\*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

Copyright (C) 2008-2011 INADA Naoki <songofacandy@gmail.com>

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

Python was created in the early 1990s by Guido van Rossum at Stichting

Mathematisch Centrum (CWI, see http://www.cwi.nl) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Owner

GPL-

rerease	Den	rea rea	ai Owi	ici Oi L-
	from		con	npatible? (1)
0.9.0 thru	1.2	1991-	1995 CW	T yes
1.3 thru 1	.5.2 1.2	1995	5-1999 Cl	NRI yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOpen	.com no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6	5.1 2001	PSF	no
2.0.1	2.0+1.	6.1 2001	PSF	yes
2.1.1	2.1+2.	0.1 2001	PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2	003 PSF	yes
2.3.1	2.3	2002-2	003 PSF	yes
2.3.2	2.3.1	2002-2	2003 PSF	yes
2.3.3	2.3.2	2002-2	2003 PSF	yes
2.3.4	2.3.3	2004	PSF	yes
2.3.5	2.3.4	2005	PSF	yes
2.4	2.3	2004	PSF	yes
2.4.1	2.4	2005	PSF	yes

Derived Year

Release

2.4.2	2.4.1	2005	PSF	yes
2.4.3	2.4.2	2006	PSF	yes
2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
3.0	2.6	2008	PSF	yes
3.0.1	3.0	2009	PSF	yes
3.1	3.0.1	2009	PSF	yes
3.1.1	3.1	2009	PSF	yes
3.1.2	3.1	2010	PSF	yes
3.2	3.1	2010	PSF	yes

#### Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

## B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2 $\,$

-----

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.

- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

#### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the

Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").

- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.
- 7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

CNRI LICENSE	AGREEMENT	FOR P	YTHON	1.6.1

1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive,

Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.

- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based

on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

**ACCEPT** 

#### CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

\_\_\_\_\_

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

\_\_\_\_\_

Contributors

\_\_\_\_\_

- \* Alex Grnholm
- \* Alice Bevan-McGregor
- \* Arfrever Frehtes Taifersar Arahesis
- \* Christophe Combelles

- \* Daniel Stutzbach
- \* Daniel Holth
- \* Hanno Schlichting
- \* Jannis Leidel
- \* Jason R. Coombs
- \* Jim Fulton
- \* Jonathan Lange
- \* Justin Azoff
- \* Lennart Regebro
- \* Marc Abramowitz
- \* Martin von Lwis
- \* Noufal Ibrahim
- \* Pete Hollobon
- \* Philip Jenvey
- \* Reinout van Rees
- \* Robert Myers
- \* Stefan H. Holek
- \* Tarek Ziad
- \* Toshio Kuratomi

If you think you name is missing, please add it (alpha order by first name) A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Deriv	ed	Year		Own	er	GPL-
from					compatible? (1)		
0.9.0 thru	1.2	1	991-1	995	CWI	[	yes
1.3 thru 1.	5.2 1.2		1995-	1999	CN	RI	yes
1.6	1.5.2	20	00	CN	RI	no	
2.0	1.6	200	00	BeC	)pen.c	com n	.0
1.6.1	1.6	20	01	CN	RI	yes	(2)
2.1	2.0+1.6	.1 2	2001	P	SF	no	
2.0.1	2.0+1.6	5.1	2001	]	PSF	ye	S
2.1.1	2.1+2.0	).1	2001	]	PSF	ye	S
2.1.2	2.1.1	20	002	PS	F	yes	
2.1.3	2.1.2	20	002	PS	F	yes	
2.2 and ab	ove 2.1	.1	200	1-no	w P	SF	yes

#### Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

### B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

#### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

-----

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright,

- i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

## BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

#### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License

Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.

- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.
- 7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

#### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI

hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".

- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this

License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

**ACCEPT** 

#### CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

-----

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. License

A copyright notice accompanies this license document that identifies the copyright holders.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

 Redistributions in source code must retain the accompanying copyright notice, this list of conditions, and the following disclaimer.

- Redistributions in binary form must reproduce the accompanying copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
- Names of the copyright holders must not be used to endorse or promote products derived from this software without prior written permission from the copyright holders.
- 4. If any files are modified, you must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

#### Disclaimer

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

BSD 3-Clause License

Copyright (c) 2013-2021, Kim Davies All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. argparse is (c) 2006-2009 Steven J. Bethard <steven.bethard@gmail.com>.

The argparse module was contributed to Python as of Python 2.7 and thus was licensed under the Python license. Same license applies to all files in the argparse package project.

For details about the Python License, please see doc/Python-License.txt.

History

Before (and including) argparse 1.1, the argparse package was licensed under Apache License v2.0.

After argparse 1.1, all project files from the argparse project were deleted due to license compatibility issues between Apache License 2.0 and GNU GPL v2.

The project repository then had a clean start with some files taken from Python 2.7.1, so definitely all files are under Python License now. Copyright (c) 2006-2021 by the respective authors (see AUTHORS file). All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE.

DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Copyright (c) 2006-2013 James Graham and other contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

=========

#### Contributors

\_\_\_\_\_

- \* Alex Grnholm
- \* Alice Bevan-McGregor
- \* Arfrever Frehtes Taifersar Arahesis
- \* Christophe Combelles
- \* Daniel Stutzbach
- \* Daniel Holth
- \* Dirley Rodrigues
- \* Donald Stufft
- \* Grigory Petrov
- \* Hanno Schlichting
- \* Jannis Leidel
- \* Jason R. Coombs
- \* Jim Fulton
- \* Jonathan Lange
- \* Justin Azoff
- \* Lennart Regebro
- \* Marc Abramowitz
- \* Martin von Lwis
- \* Noufal Ibrahim
- \* Pete Hollobon

- \* Phillip J. Eby
- \* Philip Jenvey
- \* Philip Thiem
- \* Reinout van Rees
- \* Robert Myers
- \* Stefan H. Holek
- \* Tarek Ziad
- \* Toshio Kuratomi

If you think you name is missing, please add it (alpha order by first name) Copyright (c) 2011 Agendaless Consulting and Contributors. (http://www.agendaless.com), All Rights Reserved
MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) Donald Stufft and individual contributors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED

WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Copyright 2012-2021 Eric Larson

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2008-present The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

- or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.
  Copyright (c) 2008-2013 The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish,

distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

License for Bundle of CA Root Certificates (pip/cacert.pem)

\_\_\_\_\_\_

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

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

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License. "Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

- on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.
- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.6 ncurses 6.3\_p20220521-r0

### 1.6.1 Available under license:

Upstream source https://invisible-island.net/ncurses/ncurses.html This package is used for testing builds of ncurses.

Current neurses maintainer: Thomas Dickey <dickey@invisible-island.net>

-----

Files: \*

Copyright: 2017-2020,2021 by Thomas E. Dickey

Copyright: 1998-2016,2017 Free Software Foundation, Inc.

Licence: X11

Files: aclocal.m4 package

Copyright: 1996-2020,2021 by Thomas E. Dickey

Licence: X11

Files: doc/html/NCURSES-Programming-HOWTO.html

Copyright: 2001 by Pradeep Padala

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.

-----

Files: install-sh

Copyright: 1994 X Consortium

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

-----

Files: progs/tset.c ncurses/tinfo/read\_termcap.c

Copyright: 1980,1991,1992,1993 The Regents of the University of California.

License: BSD

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the University nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

-- vile: txtmode file-encoding=utf-8Copyright 2018-2020,2021 Thomas E. DickeyCopyright 1998-2017,2018 Free Software Foundation, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.

-- vile:txtmode fc=72

-- \$Id: COPYING,v 1.10 2021/01/01 09:54:30 tom Exp \$ Upstream source https://invisible-island.net/ncurses/Ada95.html

Current ncurses maintainer: Thomas Dickey <dickey@invisible-island.net>

\_\_\_\_\_

Files: \*

Copyright: 2017-2020,2021 by Thomas E. Dickey

Copyright: 1998-2016,2017 Free Software Foundation, Inc.

Licence: X11

Files: aclocal.m4 package

Copyright: 2010-2020,2021 by Thomas E. Dickey

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.

-----

Files: install-sh

Copyright: 1994 X Consortium

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other deal-

ings in this Software without prior written authorization from the X Consortium.

FSF changes to this file are in the public domain.

Calling this script install-sh is preferred over install.sh, to prevent `make' implicit rules from creating a file called install from it when there is no Makefile.

This script is compatible with the BSD install script, but was written from scratch. It can only install one file at a time, a restriction shared with many OS's install programs.

On Debian systems, the complete text of the GNU General Public License can be found in '/usr/share/common-licenses/GPL-2'

-- vile: txtmode file-encoding=utf-8

Upstream source https://invisible-island.net/ncurses/ncurses-examples.html

Current neurses maintainer: Thomas Dickey <dickey@invisible-island.net>

\_\_\_\_\_

Files: \*

Copyright: 2017-2020,2021 Thomas E. Dickey

Copyright: 1998-2016,2017 Free Software Foundation, Inc.

Licence: X11

Files: aclocal.m4 package

Copyright: 2003-2019,2020 by Thomas E. Dickey

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR

#### THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.

.....

Files: install-sh

Copyright: 1994 X Consortium

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

FSF changes to this file are in the public domain.

Calling this script install-sh is preferred over install.sh, to prevent `make' implicit rules from creating a file called install from it when there is no Makefile.

This script is compatible with the BSD install script, but was written from scratch. It can only install one file at a time, a restriction shared with many OS's install programs.

On Debian systems, the complete text of the GNU General Public License can be found in '/usr/share/common-licenses/GPL-2'

-- vile: txtmode file-encoding=utf-8

Upstream source https://invisible-island.net/ncurses/ncurses-examples.html

Current neurses maintainer: Thomas Dickey <dickey@invisible-island.net>

-----

Files: \*

Copyright: 2017-2020,2021 Thomas E. Dickey

Copyright: 1998-2016,2017 Free Software Foundation, Inc.

Licence: X11

Files: aclocal.m4 package

Copyright: 2003-2020,2021 by Thomas E. Dickey

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, distribute with modifications, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name(s) of the above copyright holders shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization.

\_\_\_\_\_

Files: install-sh

Copyright: 1994 X Consortium

Licence: X11

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is

furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from the X Consortium.

FSF changes to this file are in the public domain.

Calling this script install-sh is preferred over install.sh, to prevent `make' implicit rules from creating a file called install from it when there is no Makefile.

This script is compatible with the BSD install script, but was written from scratch. It can only install one file at a time, a restriction shared with many OS's install programs.

On Debian systems, the complete text of the GNU General Public License can be found in '/usr/share/common-licenses/GPL-2'

-- vile: txtmode file-encoding=utf-8

# 1.7 py3-tomli 2.0.1-r1

### 1.7.1 Available under license:

MIT License

Copyright (c) 2021 Taneli Hukkinen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all

copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License

Copyright (c) 2021 Pradyun Gedam and Contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Portions of the Software include code copyright (c) Rebecca Turner.

SPDX-License-Identifier: MIT

SPDX-FileCopyrightText: 2021 Taneli Hukkinen Licensed to PSF under a Contributor Agreement.

MIT License

Copyright (c) 2020 Bob Fang (bob.fang.london@gmail.com)

Copyright (c) 2021 Taneli Hukkinen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE

WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR

COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR

OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2018 TOML authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.8 urllib3 1.26.7

## 1.8.1 Available under license:

MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.9 musl 1.2.3-r0

### 1.9.1 Available under license:

musl as a whole is licensed under the following standard MIT license:

Copyright 2005-2020 Rich Felker, et al.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

-----

Authors/contributors include:

Ada Worcester Alex Dowad Alex Suykov

A. Wilcox

Alexander Monakov

Andre McCurdy

Andrew Kelley

Anthony G. Basile

Aric Belsito

Arvid Picciani

Bartosz Brachaczek

Benjamin Peterson

**Bobby Bingham** 

Boris Brezillon

Brent Cook

Chris Spiegel

Clment Vasseur

Daniel Micay

Daniel Sabogal

Daurnimator

David Carlier

David Edelsohn

Denys Vlasenko

**Dmitry Ivanov** 

Dmitry V. Levin

Drew DeVault

**Emil Renner Berthing** 

Fangrui Song

Felix Fietkau

Felix Janda

Gianluca Anzolin

Hauke Mehrtens

He X

Hiltjo Posthuma

Isaac Dunham

Jaydeep Patil

Jens Gustedt

Jeremy Huntwork

Jo-Philipp Wich

Joakim Sindholt

John Spencer

Julien Ramseier

Justin Cormack

Kaarle Ritvanen

Khem Raj

Kylie McClain

Leah Neukirchen

Luca Barbato

Luka Perkov

M Farkas-Dyck (Strake)

Mahesh Bodapati

Markus Wichmann

Masanori Ogino

Michael Clark

Michael Forney

Mikhail Kremnyov

Natanael Copa

Nicholas J. Kain

orc

Pascal Cuoq

Patrick Oppenlander

Petr Hosek

Petr Skocik

Pierre Carrier

Reini Urban

Rich Felker

Richard Pennington

Ryan Fairfax

Samuel Holland

Segev Finer

Shiz

sin

Solar Designer

Stefan Kristiansson

Stefan O'Rear

Szabolcs Nagy

Timo Ters

Trutz Behn

Valentin Ochs

Will Dietz

William Haddon

William Pitcock

Portions of this software are derived from third-party works licensed under terms compatible with the above MIT license:

The TRE regular expression implementation (src/regex/reg\* and src/regex/tre\*) is Copyright 2001-2008 Ville Laurikari and licensed under a 2-clause BSD license (license text in the source files). The included version has been heavily modified by Rich Felker in 2012, in the interests of size, simplicity, and namespace cleanliness.

Much of the math library code (src/math/\* and src/complex/\*) is

Copyright 1993,2004 Sun Microsystems or

Copyright 2003-2011 David Schultz or

Copyright 2003-2009 Steven G. Kargl or

Copyright 2003-2009 Bruce D. Evans or

Copyright 2008 Stephen L. Moshier or

Copyright 2017-2018 Arm Limited

and labelled as such in comments in the individual source files. All have been licensed under extremely permissive terms.

The ARM memcpy code (src/string/arm/memcpy.S) is Copyright 2008 The Android Open Source Project and is licensed under a two-clause BSD license. It was taken from Bionic libc, used on Android.

The AArch64 memcpy and memset code (src/string/aarch64/\*) are Copyright 1999-2019, Arm Limited.

The implementation of DES for crypt (src/crypt/crypt\_des.c) is Copyright 1994 David Burren. It is licensed under a BSD license.

The implementation of blowfish crypt (src/crypt/crypt\_blowfish.c) was originally written by Solar Designer and placed into the public domain. The code also comes with a fallback permissive license for use in jurisdictions that may not recognize the public domain.

The smoothsort implementation (src/stdlib/qsort.c) is Copyright 2011 Valentin Ochs and is licensed under an MIT-style license.

The x86\_64 port was written by Nicholas J. Kain and is licensed under the standard MIT terms.

The mips and microblaze ports were originally written by Richard Pennington for use in the ellcc project. The original code was adapted by Rich Felker for build system and code conventions during upstream integration. It is licensed under the standard MIT terms.

The mips64 port was contributed by Imagination Technologies and is licensed under the standard MIT terms.

The powerpc port was also originally written by Richard Pennington, and later supplemented and integrated by John Spencer. It is licensed under the standard MIT terms.

All other files which have no copyright comments are original works produced specifically for use as part of this library, written either by Rich Felker, the main author of the library, or by one or more contibutors listed above. Details on authorship of individual files can be found in the git version control history of the project. The omission of copyright and license comments in each file is in the interest of source tree size.

In addition, permission is hereby granted for all public header files (include/\* and arch/\*/bits/\*) and crt files intended to be linked into applications (crt/\*, ldso/dlstart.c, and arch/\*/crt\_arch.h) to omit the copyright notice and permission notice otherwise required by the license, and to use these files without any requirement of attribution. These files include substantial contributions from:

Bobby Bingham John Spencer Nicholas J. Kain Rich Felker Richard Pennington Stefan Kristiansson Szabolcs Nagy

all of whom have explicitly granted such permission.

This file previously contained text expressing a belief that most of the files covered by the above exception were sufficiently trivial not to be subject to copyright, resulting in confusion over whether it negated the permissions granted in the license. In the spirit of permissive licensing, and of not having licensing issues being an obstacle to adoption, that text has been removed.

## 1.10 rich 11.0.0

### 1.10.1 Available under license:

Copyright (c) 2020 Will McGugan

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.11 alpine-baselayout 3.2.0-r23

## 1.11.1 Available under license:

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

/\*

\* Create mount directories in fstab

\*

\* Copyright(c) 2008 Natanael Copa <natanael.copa@gmail.com>

\* May be distributed under the terms of GPL-2

\*

\* usage: mkmntdirs [fstab]

\*

\*/

#### Found in path(s):

\* /opt/cola/permits/1413259866\_1664205148.023589/0/alpine-baselayout-3-2-0-r23-tgz/mkmntdirs.c No license file was found, but licenses were detected in source scan.

/opt/cola/permits/1413259866\_1664205148.023589/0/alpine-baselayout-3-2-0-r23-tgz/z: binary file matches

#### Found in path(s):

\* /bin/grep

# 1.12 pyyaml 5.4.1

## 1.12.1 Available under license:

Copyright (c) 2017-2021 Ingy dt Net Copyright (c) 2006-2016 Kirill Simonov

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.13 xz 5.2.5-r1

### 1.13.1 Available under license:

XZ Utils Licensing

Different licenses apply to different files in this package. Here is a rough summary of which licenses apply to which parts of this package (but check the individual files to be sure!):

- liblzma is in the public domain.
- xz, xzdec, and lzmadec command line tools are in the public domain unless GNU getopt\_long had to be compiled and linked in from the lib directory. The getopt\_long code is under GNU LGPLv2.1+.
- The scripts to grep, diff, and view compressed files have been adapted from gzip. These scripts and their documentation are under GNU GPLv2+.
- All the documentation in the doc directory and most of the XZ Utils specific documentation files in other directories are in the public domain.
- Translated messages are in the public domain.
- The build system contains public domain files, and files that are under GNU GPLv2+ or GNU GPLv3+. None of these files end up in the binaries being built.
- Test files and test code in the tests directory, and debugging utilities in the debug directory are in the public domain.
- The extra directory may contain public domain files, and files that are under various free software licenses.

You can do whatever you want with the files that have been put into the public domain. If you find public domain legally problematic, take the previous sentence as a license grant. If you still find the lack of copyright legally problematic, you have too many lawyers.

As usual, this software is provided "as is", without any warranty.

If you copy significant amounts of public domain code from XZ Utils into your project, acknowledging this somewhere in your software is polite (especially if it is proprietary, non-free software), but naturally it is not legally required. Here is an example of a good notice to put into "about box" or into documentation:

This software includes code from XZ Utils <a href="https://tukaani.org/xz/">https://tukaani.org/xz/>.

The following license texts are included in the following files:

- COPYING, LGPLv2.1: GNU Lesser General Public License version 2.1
- COPYING.GPLv2: GNU General Public License version 2
- COPYING.GPLv3: GNU General Public License version 3

Note that the toolchain (compiler, linker etc.) may add some code pieces that are copyrighted. Thus, it is possible that e.g. liblzma binary wouldn't actually be in the public domain in its entirety even though it contains no copyrighted code from the XZ Utils source package.

If you have questions, don't hesitate to ask the author(s) for more information.

### GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

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

along with the Program.

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
  - b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

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

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

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

- 3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
  - a) Accompany it with the complete corresponding machine-readable
     source code, which must be distributed under the terms of Sections
     1 and 2 above on a medium customarily used for software interchange; or,
  - b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
  - c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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

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

signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

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

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

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

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

- 8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

- 11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
- 12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER

## PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

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

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

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

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

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

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

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

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

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

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <a href="http://fsf.org/">http://fsf.org/</a> Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program—to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

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

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

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

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

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

#### TERMS AND CONDITIONS

0. Definitions.

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

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

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and

"recipients" may be individuals or organizations.

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

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

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

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

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

#### 1. Source Code.

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

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

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component

(kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

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

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

#### 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

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

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

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

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

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

#### 4. Conveying Verbatim Copies.

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

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

#### 5. Conveying Modified Source Versions.

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

- a) The work must carry prominent notices stating that you modified it, and giving a relevant date.
- b) The work must carry prominent notices stating that it is released under this License and any conditions added under section
- 7. This requirement modifies the requirement in section 4 to "keep intact all notices".
- c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts,

regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

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

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

#### 6. Conveying Non-Source Forms.

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

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

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

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

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

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a

fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

#### 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal

- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

#### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and

finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of

rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or

arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

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

You should have received a copy of the GNU General Public License along with this program. If not, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>>.

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

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

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

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

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <a href="http://www.gnu.org/philosophy/why-not-lgpl.html">http://www.gnu.org/philosophy/why-not-lgpl.html</a>.

## 1.14 click-default-group 1.2.2

## 1.14.1 Available under license:

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

Click Default Group

`DefaultGroup` is a sub class of [`click.Group`](http://click.pocoo.org/6/api/#click.Group). But it invokes a default subcommand instead of showing a help message when a subcommand is not passed.

[![Build Status](https://img.shields.io/travis/click-contrib/click-default-group.svg)](https://travis-ci.org/click-contrib/click-default-group)

[![Coverage Status](https://img.shields.io/coveralls/click-contrib/click-default-group.svg)](https://coveralls.io/r/click-contrib/click-default-group)

Usage
---Define a default subcommand by `default=NAME`:

```python
import click
from click\_default\_group import DefaultGroup

@click.group(cls=DefaultGroup, default='foo', default\_if\_no\_args=True)
def cli():
 pass

```
@cli.command()
def foo():
  click.echo('foo')
@cli.command()
def bar():
 click.echo('bar')
Then you can invoke that without explicit subcommand name:
```console
$ cli.py --help
Usage: cli.py [OPTIONS] COMMAND [ARGS]...
Options:
--help Show this message and exit.
Command:
foo*
bar
$ cli.py
foo
$ cli.py foo
foo
$ cli.py bar
bar
Compatibility
-----
`click-default-group` is compatible with these Click versions:
- Click-7.0
- Click-6.x
- Click-5.1
- Click-5.0
- Click-4.1
- Click-4.0
See the [latest build status](https://travis-ci.org/click-contrib/click-default-group)
at Travis CI.
Licensing
```

Written by [Heungsub Lee], and distributed under the [BSD 3-Clause] license. [Heungsub Lee]: http://subl.ee/ [BSD 3-Clause]: http://opensource.org/licenses/BSD-3-Clause Found in path(s): \*/opt/cola/permits/1285248545 1646891956.77/0/click-default-group-1-2-2-tar-gz/click-default-group-1.2.2/README.md No license file was found, but licenses were detected in source scan. 'License :: Public Domain', Found in path(s): \*/opt/cola/permits/1285248545\_1646891956.77/0/click-default-group-1-2-2-tar-gz/click-default-group-1.2.2/setup.py No license file was found, but licenses were detected in source scan. Metadata-Version: 2.1 Name: click-default-group Version: 1.2.2 Summary: Extends click. Group to invoke a command without explicit subcommand name Home-page: https://github.com/sublee/click-default-group/ Author: Heungsub Lee Author-email: sub@subl.ee License: BSD Description: Click Default Group `DefaultGroup` is a sub class of [`click.Group`](http://click.pocoo.org/6/api/#click.Group). But it invokes a default subcommand instead of showing a help message when a subcommand is not passed. [![Build Status](https://img.shields.io/travis/click-contrib/click-default-group.svg)](https://travis-ci.org/clickcontrib/click-default-group) [![Coverage Status](https://img.shields.io/coveralls/click-contrib/click-defaultgroup.svg)](https://coveralls.io/r/click-contrib/click-default-group) Usage Define a default subcommand by `default=NAME`: ```python import click from click\_default\_group import DefaultGroup

def cli():

@click.group(cls=DefaultGroup, default='foo', default\_if\_no\_args=True)

```
pass
@cli.command()
def foo():
  click.echo('foo')
@cli.command()
def bar():
  click.echo('bar')
Then you can invoke that without explicit subcommand name:
```console
$ cli.py --help
Usage: cli.py [OPTIONS] COMMAND [ARGS]...
Options:
 --help Show this message and exit.
Command:
 foo*
 bar
$ cli.py
foo
$ cli.py foo
foo
$ cli.py bar
bar
Compatibility
-----
`click-default-group` is compatible with these Click versions:
- Click-7.0
- Click-6.x
- Click-5.1
- Click-5.0
- Click-4.1
- Click-4.0
See the [latest build status](https://travis-ci.org/click-contrib/click-default-group)
at Travis CI.
Licensing
```

-----

Written by [Heungsub Lee], and distributed under the [BSD 3-Clause] license.

[Heungsub Lee]: http://subl.ee/

[BSD 3-Clause]: http://opensource.org/licenses/BSD-3-Clause

Platform: any

Classifier: Development Status :: 5 - Production/Stable

Classifier: Intended Audience :: Developers

Classifier: License :: Public Domain

Classifier: Programming Language :: Python :: 2
Classifier: Programming Language :: Python :: 2.7
Classifier: Programming Language :: Python :: 3
Classifier: Programming Language :: Python :: 3.5
Classifier: Programming Language :: Python :: 3.6
Classifier: Programming Language :: Python :: 3.7

Classifier: Programming Language :: Python :: Implementation :: CPython Classifier: Programming Language :: Python :: Implementation :: PyPy

Description-Content-Type: text/markdown

#### Found in path(s):

- $*/opt/cola/permits/1285248545\_1646891956.77/0/click-default-group-1-2-2-tar-gz/click-default-group-1.2.2/PKG-INFO$
- \* /opt/cola/permits/1285248545\_1646891956.77/0/click-default-group-1-2-2-tar-gz/click-default-group-1.2.2/click\_default\_group.egg-info/PKG-INFO

## 1.15 more-itertools 8.13.0

### 1.15.1 Available under license:

Copyright (c) 2012 Erik Rose

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER

LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.16 async-timeout 4.0.2

### 1.16.1 Available under license:

Copyright 2016-2020 aio-libs collaboration.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.17 iniconfig 1.1.1

### 1.17.1 Available under license:

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.18 click 8.1.3

### 1.18.1 Available under license:

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



As the userbase of Click grows, more and more major feature requests pop up in Click's bugtracker. As reasonable as it may be for those features to be bundled with Click instead of being a standalone project, many of those requested features are either highly experimental or have unproven practical use, while potentially being a burden to maintain.

This is why click-contrib\_ exists. The GitHub organization is a collection of possibly experimental third-party packages whose featureset does not belong into Click, but also a playground for major features that may be added to Click in the future. It is also meant to coordinate and concentrate effort on writing third-party extensions for Click, and to ease the effort of searching for such extensions. In that sense it could be described as a low-maintenance alternative to extension repositories of other frameworks.

Please note that the quality and stability of those packages may be different than what you expect from Click itself. While published under a common organization, they are still projects separate from Click.

.. \_click-contrib: https://github.com/click-contrib/

### Found in path(s):

\* /opt/cola/permits/1318172402\_1651721571.72/0/click-8-1-3-tar-gz/click-8.1.3/docs/contrib.rst No license file was found, but licenses were detected in source scan.

Metadata-Version: 2.1

Name: click Version: 8.1.3

Summary: Composable command line interface toolkit

Home-page: https://palletsprojects.com/p/click/

Author: Armin Ronacher

Author-email: armin.ronacher@active-4.com

Maintainer: Pallets

Maintainer-email: contact@palletsprojects.com

License: BSD-3-Clause

Project-URL: Donate, https://palletsprojects.com/donate

Project-URL: Documentation, https://click.palletsprojects.com/

Project-URL: Changes, https://click.palletsprojects.com/changes/ Project-URL: Source Code, https://github.com/pallets/click/ Project-URL: Issue Tracker, https://github.com/pallets/click/issues/ Project-URL: Twitter, https://twitter.com/PalletsTeam Project-URL: Chat, https://discord.gg/pallets Platform: UNKNOWN Classifier: Development Status :: 5 - Production/Stable Classifier: Intended Audience :: Developers Classifier: License :: OSI Approved :: BSD License Classifier: Operating System :: OS Independent Classifier: Programming Language :: Python Requires-Python: >=3.7 Description-Content-Type: text/x-rst License-File: LICENSE.rst \\$ click\ \_\_\_\_\_ Click is a Python package for creating beautiful command line interfaces in a composable way with as little code as necessary. It's the "Command Line Interface Creation Kit". It's highly configurable but comes with sensible defaults out of the box. It aims to make the process of writing command line tools quick and fun while also preventing any frustration caused by the inability to implement an intended CLI API. Click in three points: - Arbitrary nesting of commands - Automatic help page generation - Supports lazy loading of subcommands at runtime Installing -----Install and update using `pip`\_: .. code-block:: text \$ pip install -U click .. \_pip: https://pip.pypa.io/en/stable/getting-started/ A Simple Example

```
.. code-block:: python
  import click
  @click.command()
  @click.option("--count", default=1, help="Number of greetings.")
  @click.option("--name", prompt="Your name", help="The person to greet.")
  def hello(count, name):
    """Simple program that greets NAME for a total of COUNT times."""
    for _ in range(count):
      click.echo(f"Hello, {name}!")
  if __name__ == '__main__':
    hello()
.. code-block:: text
  $ python hello.py --count=3
  Your name: Click
  Hello, Click!
  Hello, Click!
  Hello, Click!
Donate
The Pallets organization develops and supports Click and other popular
packages. In order to grow the community of contributors and users, and
allow the maintainers to devote more time to the projects, 'please
donate today`_.
.. _please donate today: https://palletsprojects.com/donate
Links
- Documentation: https://click.palletsprojects.com/
```

- Changes: https://click.palletsprojects.com/changes/
- PyPI Releases: https://pypi.org/project/click/
- Source Code: https://github.com/pallets/click
- Issue Tracker: https://github.com/pallets/click/issues
- Website: https://palletsprojects.com/p/click
- Twitter: https://twitter.com/PalletsTeam
- Chat: https://discord.gg/pallets

```
Found in path(s):
```

- \*/opt/cola/permits/1318172402\_1651721571.72/0/click-8-1-3-tar-gz/click-8.1.3/src/click.egg-info/PKG-INFO
- \*/opt/cola/permits/1318172402\_1651721571.72/0/click-8-1-3-tar-gz/click-8.1.3/PKG-INFO

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

```
[metadata]
name = click
version = attr: click.__version__
url = https://palletsprojects.com/p/click/
project_urls =
Donate = https://palletsprojects.com/donate
Documentation = https://click.palletsprojects.com/
Changes = https://click.palletsprojects.com/changes/
Source Code = https://github.com/pallets/click/
Issue Tracker = https://github.com/pallets/click/issues/
Twitter = https://twitter.com/PalletsTeam
Chat = https://discord.gg/pallets
license = BSD-3-Clause
license\_files = LICENSE.rst
author = Armin Ronacher
author email = armin.ronacher@active-4.com
maintainer = Pallets
maintainer_email = contact@palletsprojects.com
description = Composable command line interface toolkit
long_description = file: README.rst
long_description_content_type = text/x-rst
classifiers =
Development Status :: 5 - Production/Stable
Intended Audience :: Developers
License :: OSI Approved :: BSD License
Operating System :: OS Independent
Programming Language:: Python
[options]
packages = find:
package\_dir = = src
include_package_data = True
python_requires = >= 3.7
[options.packages.find]
where = src
[tool:pytest]
testpaths = tests
filterwarnings =
error
[coverage:run]
```

```
branch = True
source =
click
tests
[coverage:paths]
source =
src
*/site-packages
[flake8]
select = B, E, F, W, B9, ISC
ignore =
E203
E501
E722
W503
max-line-length = 80
per-file-ignores =
src/click/__init__.py: F401
[mypy]
files = src/click
python\_version = 3.7
show\_error\_codes = True
disallow_subclassing_any = True
disallow_untyped_calls = True
disallow\_untyped\_defs = True
disallow\_incomplete\_defs = True
check\_untyped\_defs = True
no\_implicit\_optional = True
local_partial_types = True
no_implicit_reexport = True
strict_equality = True
warn\_redundant\_casts = True
warn\_unused\_configs = True
warn_unused_ignores = True
warn_return_any = True
warn\_unreachable = True
[mypy-colorama.*]
ignore_missing_imports = True
[mypy-importlib_metadata.*]
ignore_missing_imports = True
[egg_info]
tag_build =
```

#### Found in path(s):

\* /opt/cola/permits/1318172402\_1651721571.72/0/click-8-1-3-tar-gz/click-8.1.3/setup.cfg No license file was found, but licenses were detected in source scan.

Copyright 2001-2006 Gregory P. Ward. All rights reserved. Copyright 2002-2006 Python Software Foundation. All rights reserved.

#### Found in path(s):

\* /opt/cola/permits/1318172402\_1651721571.72/0/click-8-1-3-tar-gz/click-8.1.3/src/click/parser.py No license file was found, but licenses were detected in source scan.

Including attribution to #612

#### Found in path(s):

\* /opt/cola/permits/1318172402\_1651721571.72/0/click-8-1-3-tar-gz/click-8.1.3/tests/test\_formatting.py No license file was found, but licenses were detected in source scan.

Copyright 2014 Pallets

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

\*/opt/cola/permits/1318172402\_1651721571.72/0/click-8-1-3-tar-gz/click-8.1.3/LICENSE.rst

## 1.19 msgpack 1.0.4

### 1.19.1 Available under license:

.NET Core uses third-party libraries or other resources that may be distributed under licenses different than the .NET Core software.

In the event that we accidentally failed to list a required notice, please bring it to our attention. Post an issue or email us:

dotnet@microsoft.com

1	
License notice for buffer	
"The MIT License (MIT)	

Copyright (c) Feross Aboukhadijeh, and other contributors.

The attached notices are provided for information only.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE."

License notice for base64-js	
"The MIT License (MIT)	
Copyright (c) 2014	

Permission is hereby granted, free of charge, to any person obtaining a copy

of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE."

License notice for ieee754		
"Copyright (c) 2008, Fair O	aks Labs, Inc.	 

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Fair Oaks Labs, Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE."

License notice for msgpack5	
"The MIT License (MIT)	
= (1.111)	

Copyright (c) 2014 Matteo Collina

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE."

License notice for bl	
"The MIT License (MIT)	
=======================================	
Copyright (c) 2013-2016 bl contributors	

\*bl contributors listed at <a href="https://github.com/rvagg/bl#contributors">https://github.com/rvagg/bl#contributors</a>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A

PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE."

License notice for inherits	
"The ISC License	

Copyright (c) Isaac Z. Schlueter

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE."

License notice for readable-stream		
"Node.js is licensed for use as follows:		
ши		
Copyright Node.js contributors. All rights reserved.		

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER

LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

,,,,,

This license applies to parts of Node.js originating from the https://github.com/joyent/node repository:

,,,,,

Copyright Joyent, Inc. and other Node contributors. All rights reserved. Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

.....

License notice for core-util-is	

"Copyright Node.js contributors. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE."

icense notice for isarray
(MIT)

Copyright (c) 2013 Julian Gruber < julian@juliangruber.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE."

License notice for process-nextick-args	

"# Copyright (c) 2015 Calvin Metcalf

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

\*\*THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER

LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.\*\*"

License notice for string_decoder
"Node.js is licensed for use as follows:
нин

Copyright Node.js contributors. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

.....

This license applies to parts of Node.js originating from the https://github.com/joyent/node repository:

....

Copyright Joyent, Inc. and other Node contributors. All rights reserved. Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

.....

"(The MIT License)

License notice for util-deprecate	

Copyright (c) 2014 Nathan Rajlich <nathan@tootallnate.net>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE."

License notice for safe-buffer	
"The MIT License (MIT)	

Copyright (c) Feross Aboukhadijeh

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights

to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE."

# 1.20 scp 0.14.4

### 1.20.1 Available under license:

- # This library is free software; you can redistribute it and/or
- # modify it under the terms of the GNU Lesser General Public
- # License as published by the Free Software Foundation; either
- # version 2.1 of the License, or (at your option) any later version.

#

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

#

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

## 1.21 wheel 0.37.0

### 1.21.1 Available under license:

"wheel" copyright (c) 2012-2014 Daniel Holth <dholth@fastmail.fm> and contributors.

The MIT License

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.22 py 1.11.0

### 1.22.1 Available under license:

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.23 py3-setuptools 59.4.0-r0

### 1.23.1 Available under license:

Copyright Jason R. Coombs

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.24 py3-packaging 21.3-r0

### 1.24.1 Available under license:

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License. "Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity

- on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.
- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one

of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a

result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made under the terms of \*both\* these licenses.

Copyright (c) Donald Stufft and individual contributors.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.25 py3-six 1.16.0-r1

### 1.25.1 Available under license:

Copyright 2013 Ray Holder

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License
Version 2.0, January 2004
http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

- reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.
- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.26 idna 15.0.0

### 1.26.1 Available under license:

**BSD 3-Clause License** 

Copyright (c) 2013-2021, Kim Davies All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the copyright holder nor the names of its

contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.27 aiohttp 3.8.1

### 1.27.1 Available under license:

- Contributors -

\_\_\_\_\_

A. Jesse Jiryu Davis

Adam Bannister

Adam Cooper

Adam Horacek

Adam Mills

Adrian Krupa

Adrin Chaves

Ahmed Tahri

Alan Tse

Alec Hanefeld

Alejandro Gmez

Aleksandr Danshyn

Aleksey Kutepov

Alex Hayes

Alex Key

Alex Khomchenko

Alex Kuzmenko

Alex Lisovoy

Alexander Bayandin

Alexander Karpinsky

Alexander Koshevoy

Alexander Malev

Alexander Mohr

Alexander Shorin

Alexander Travov

Alexandru Mihai

Alexey Firsov

Alexey Popravka

Alexey Stepanov

Amin Etesamian

Amit Tulshyan

Amy Boyle

Anas El Amraoui

Anders Melchiorsen

Andrei Ursulenko

Andrej Antonov

Andrew Leech

Andrew Lytvyn

Andrew Svetlov

Andrew Zhou

Andrii Soldatenko

Anes Abismail

Antoine Pietri

Anton Kasyanov

Anton Zhdan-Pushkin

Arseny Timoniq

Artem Yushkovskiy

Arthur Darcet

Austin Scola

Ben Bader

Ben Timby

Benedikt Reinartz

Bob Haddleton

Boris Feld

Boyi Chen

Brett Cannon

Brian Bouterse

Brian C. Lane

Brian Muller

Bruce Merry

Bryan Kok

Bryce Drennan

Carl George

Cecile Tonglet

Chien-Wei Huang

Chih-Yuan Chen

Chris AtLee

Chris Laws

Chris Moore

Christopher Schmitt

Claudiu Popa

Colin Dunklau

Cong Xu

Damien Nad

Dan King

Dan Xu

Daniel Garca

Daniel Grossmann-Kavanagh

Daniel Nelson

Danny Song

David Bibb

David Michael Brown

Denilson Amorim

Denis Matiychuk

Denis Moshensky

Dennis Kliban

Dima Veselov

**Dimitar Dimitrov** 

**Dmitriy Safonov** 

**Dmitry Doroshev** 

Dmitry Erlikh

**Dmitry Lukashin** 

**Dmitry Marakasov** 

**Dmitry Shamov** 

**Dmitry Trofimov** 

Dmytro Bohomiakov

Dmytro Kuznetsov

Dustin J. Mitchell

**Eduard Iskandarov** 

Eli Ribble

Elizabeth Leddy

**Enrique Saez** 

Eric Sheng

Erich Healy

Erik Peterson

Eugene Chernyshov

Eugene Naydenov

Eugene Nikolaiev

Eugene Tolmachev

Evan Kepner

**Evert Lammerts** 

Felix Yan

Fernanda Guimares

FichteFoll

Florian Scheffler

Franek Magiera

Frederik Gladhorn

Frederik Peter Aalund

Gabriel Tremblay

Gary Wilson Jr.

Gennady Andreyev

Georges Dubus

Greg Holt

Gregory Haynes

Gus Goulart

Gustavo Carneiro

Gnther Jena

Hans Adema

Harmon Y.

Harry Liu

Hiroshi Ogawa

Hrishikesh Paranjape

Hu Bo

Hugh Young

Hugo Herter

Hugo van Kemenade

Hynek Schlawack

Igor Alexandrov

Igor Davydenko

Igor Mozharovsky

Igor Pavlov

Illia Volochii

Ilya Chichak

Ilya Gruzinov

Ingmar Steen

Jacob Champion

Jaesung Lee

Jake Davis

Jakob Ackermann

Jakub Wilk

Jan Buchar

Jashandeep Sohi

Jens Steinhauser

Jeonghun Lee

Jeongkyu Shin

Jeroen van der Heijden

Jesus Cea

Jian Zeng

Jinkyu Yi

Joel Watts

Jon Nabozny

Jonas Krger Svensson

Jonas Obrist

Jonathan Wright

Jonny Tan

Joongi Kim

Jordan Borean

Josep Cugat

Josh Junon

Joshu Coats

Julia Tsemusheva

Julien Duponchelle

Jungkook Park

Junjie Tao

Junyeong Jeong

Justas Trimailovas

Justin Foo

Justin Turner Arthur

Kay Zheng

Kevin Samuel

Kimmo Parviainen-Jalanko

Kirill Klenov

Kirill Malovitsa

Konstantin Valetov

Krzysztof Blazewicz

Kyrylo Perevozchikov

Kyungmin Lee

Lars P. Sndergaard

Liu Hua

Louis-Philippe Huberdeau

Loc Lajeanne

Lu Gong

Lubomir Gelo

Ludovic Gasc

Luis Pedrosa

Lukasz Marcin Dobrzanski

Makc Belousow

Manuel Miranda

Marat Sharafutdinov

Marco Paolini

Mariano Anaya

Mariusz Masztalerczuk

Marko Kohtala

Martijn Pieters

Martin Melka

Martin Richard

Mathias Frjdman

Mathieu Dugr

Matthieu Hauglustaine

Matthieu Rigal

Michael Ihnatenko

Micha Grny

Mikhail Burshteyn

Mikhail Kashkin

Mikhail Lukyanchenko

Mikhail Nacharov

Misha Behersky

Mitchell Ferree

Morgan Delahaye-Prat

Moss Collum

Mun Gwan-gyeong

Navid Sheikhol

Nicolas Braem

Nikolay Kim

Nikolay Novik

Nndor Mtravlgyi

Oisin Aylward

Olaf Conradi

Pahaz Blinov

Panagiotis Kolokotronis

Pankaj Pandey

Pau Freixes

Paul Colomiets

Paulius ileikis

Paulus Schoutsen

Pavel Kamaev

Pavel Polyakov

Pavel Sapezhko

Pavol Vargovk

Pawel Kowalski

Pawel Miech

Pepe Osca

Philipp A.

Pieter van Beek

Qiao Han

Rafael Viotti

Raphael Bialon

Ral Cumplido

Required Field

Robert Lu

Robert Nikolich

Roman Podoliaka

Samuel Colvin

Sean Hunt

Sebastian Acuna

Sebastian Hanula

Sebastian Hther

Sebastien Geffroy

SeongSoo Cho

Sergey Ninua

Sergey Skripnick

Serhii Charykov

Serhii Kostel

Serhiy Storchaka

Simon Kennedy

Sin-Woo Bang

Stanislas Plum

Stanislav Prokop

Stefan Tjarks

Stepan Pletnev

Stephan Jaensch

Stephen Cirelli

Stephen Granade

Steven Seguin

Sunghyun Hwang

Sunit Deshpande

Sviatoslav Bulbakha

Sviatoslav Sydorenko

Taha Jahangir

Taras Voinarovskyi

Terence Honles

Thanos Lefteris

Thijs Vermeir

Thomas Forbes

Thomas Grainger

Tolga Tezel

Tomasz Trebski

Toshiaki Tanaka

Trinh Hoang Nhu

Vadim Suharnikov

Vaibhav Sagar

Vamsi Krishna Avula

Vasiliy Faronov

Vasyl Baran

Viacheslav Greshilov

Victor Collod

Victor Kovtun

Vikas Kawadia

Viktor Danyliuk

Ville Skytt

Vincent Maillol

Vitalik Verhovodov

Vitaly Haritonsky

Vitaly Magerya

Vladimir Kamarzin

Vladimir Kozlovski

Vladimir Rutsky

Vladimir Shulyak

Vladimir Zakharov

Vladyslav Bohaichuk

Vladyslav Bondar

W. Trevor King

Wei Lin

Weiwei Wang

Will Fatherley

Will McGugan

Willem de Groot

William Grzybowski

William S.

Wilson Ong

Yang Zhou

Yannick Koechlin

Yannick Proux

Ye Cao

Yegor Roganov

Yifei Kong

Young-Ho Cha

Yuriy Shatrov

Yury Pliner

Yury Selivanov

Yusuke Tsutsumi

Yuval Ofir

Zeal Wierslee

Zlatan Sianica

Copyright 2013-2020 aio-libs collaboration.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This software is licensed under the MIT License.

Copyright Fedor Indutny, 2018.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.28 pax-utils 1.3.4-r0

### 1.28.1 Available under license:

GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

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

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

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

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

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

3. You may copy and distribute the Program (or a work based on it,

under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable
  source code, which must be distributed under the terms of Sections
  1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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

- 4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

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

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

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

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the

original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

- 11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
- 12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

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

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

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

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

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

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

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your

school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

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

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

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.29 tenacity 8.0.1

## 1.29.1 Available under license:

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made,

use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions

for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability

incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.30 expat 2.4.9-r0

### 1.30.1 Available under license:

Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper Copyright (c) 2001-2022 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.31 pytest-asyncio 0.15.1

## 1.31.1 Available under license:

Apache License

Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct

- or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following

boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.32 bridgeutils 1.7.1-r0

### 1.32.1 Available under license:

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

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

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
  - b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you

distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

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

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

- 3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
- a) Accompany it with the complete corresponding machine-readable
   source code, which must be distributed under the terms of Sections
   1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering

access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

- 4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

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

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

- 8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES

PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>

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

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

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

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

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

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

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

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

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

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

## 1.33 apipkg 2.0.0

### 1.33.1 Available under license:

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.34 pyyaml 5.4.1-1.ph4

### 1.34.1 Available under license:

Copyright (c) 2017-2021 Ingy döt Net Copyright (c) 2006-2016 Kirill Simonov

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.35 urllib3 1.26.12

### 1.35.1 Available under license:

MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.36 alpine-baselayout 3.2.0-r22

### 1.36.1 Available under license:

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

/\*

\* Create mount directories in fstab

\*

- \* Copyright(c) 2008 Natanael Copa <natanael.copa@gmail.com>
- \* May be distributed under the terms of GPL-2

\*

\* usage: mkmntdirs [fstab]

\*

\*/

### Found in path(s):

- $*/opt/cola/permits/1344947999\_1657894591.0906107/0/alpine-baselayout-3-2-0-r22-tar-gz/alpine-baselayout-tar-gz/mkmntdirs.c$
- \*/opt/cola/permits/1344947999\_1657894591.0906107/0/alpine-baselayout-3-2-0-r22-tar-gz/mkmntdirs.c

## 1.37 frozenlist 1.3.1

### 1.37.1 Available under license:

- Contributors -

Andrew Svetlov

Marcin Konowalczyk

Martijn Pieters

Pau Freixes

Paul Colomiets

Apache License

Version 2.0, January 2004

http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to

communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2013-2019 Nikolay Kim and Andrew Svetlov

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

## 1.38 openssl 1.1.1q-r0

### 1.38.1 Available under license:

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

Description: Bindings to OpenSSL libssl and libcrypto, plus custom SSH pubkey parsers. Supports RSA, DSA and EC curves P-256, P-384 and P-521. Cryptographic signatures can either be created and verified manually or via x509 certificates. AES can be used in cbc, ctr or gcm mode for symmetric encryption; RSA for asymmetric (public key) encryption or EC for Diffie Hellman. High-level envelope functions combine RSA and AES for encrypting arbitrary sized data. Other utilities include key generators, hash functions (md5, sha1, sha256, etc), base64 encoder, a secure random number generator, and 'bignum' math methods for manually performing crypto calculations on large multibyte integers.

Packaged: 2018-11-15 13:15:06 UTC; jeroen

License: MIT + file LICENSE

Title: Toolkit for Encryption, Signatures and Certificates Based on OpenSSL

URL: https://github.com/jeroen/openssl#readme
BugReports: https://github.com/jeroen/openssl/issues

SystemRequirements: OpenSSL >= 1.0.1

RoxygenNote: 6.1.1 VignetteBuilder: knitr

Maintainer: Jeroen Ooms <jeroen@berkeley.edu>

Type: Package Repository: CRAN

Version: 1.1

Suggests: testthat, digest, knitr, rmarkdown, jsonlite, jose

NeedsCompilation: yes

Author: Jeroen Ooms [aut, cre] (<a href="https://orcid.org/0000-0002-4035-0289">https://orcid.org/0000-0002-4035-0289</a>), Oliver Keyes [ctb]

Package: openssl

Authors@R: c(person("Jeroen", "Ooms", role = c("aut", "cre"), email = "jeroen@berkeley.edu", comment = c

c(ORCID = "0000-0002-4035-0289")), person("Oliver", "Keyes", role = "ctb"))

Date/Publication: 2018-11-15 14:20:03 UTC

### Found in path(s):

\* /opt/cola/permits/1357762054\_1657278687.5787704/0/openssl-1-1-b1-jar/org/renjin/cran/openssl/DESCRIPTION No license file was found, but licenses were detected in source scan.

```
/*!
```

- \* Bootstrap v3.3.5 (http://getbootstrap.com)
- \* Copyright 2011-2015 Twitter, Inc.
- \* Licensed under the MIT license

\*/

/\*! Respond.js v1.4.2: min/max-width media query polyfill \* Copyright 2013 Scott Jehl

 $*\ Licensed\ under\ https://github.com/scottjehl/Respond/blob/master/LICENSE-MIT$ 

\* \*/

### Found in path(s):

- $*/opt/cola/permits/1357762054\_1657278687.5787704/0/openssl-1-1-b1-jar/org/renjin/cran/openssl/doc/secure\_rng.html$
- $*/opt/cola/permits/1357762054\_1657278687.5787704/0/openssl-1-1-b1-jar/org/renjin/cran/openssl/doc/bignum.html$
- \*/opt/cola/permits/1357762054\_1657278687.5787704/0/openssl-1-1-b1-jar/org/renjin/cran/openssl/doc/keys.html

jar/org/renjin/cran/openssl/doc/crypto\_hashing.html

## 1.39 futures 3.4.0

### 1.39.1 Available under license:

PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.

- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON,

#### OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

## 1.40 attrs 21.4.0

### 1.40.1 Available under license:

The MIT License (MIT)

Copyright (c) 2015 Hynek Schlawack

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.41 packaging 21.3

### 1.41.1 Available under license:

Apache License Version 2.0, January 2004

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or

implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made under the terms of \*both\* these licenses.

Copyright (c) Donald Stufft and individual contributors.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED

WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.42 chardet 4.0.0

### 1.42.1 Available under license:

GNU LESSER GENERAL PUBLIC LICENSE Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid

distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

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

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

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

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

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

# GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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

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

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a

portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

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

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

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

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

- 2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) The modified work must itself be a software library.
  - b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
  - c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
  - d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or

table, the facility still operates, and performs whatever part of its purpose remains meaningful.

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

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

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

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

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

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

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

4. You may copy and distribute the Library (or a portion or

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

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

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

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

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

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

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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

engineering for debugging such modifications.

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

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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

which the executable runs, unless that component itself accompanies the executable.

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

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
  - b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with

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

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

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

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

- 12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and

"any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

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

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

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

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

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

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

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

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it!

# 1.43 gdbm 1.23-r0

## 1.43.1 Available under license:

GNU GENERAL PUBLIC LICENSE Version 3, 29 June 2007

Copyright (C) 2007, 2011 Free Software Foundation, Inc. <a href="http://fsf.org/">http://fsf.org/</a>> Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

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

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

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

products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

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

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

#### TERMS AND CONDITIONS

#### 0. Definitions.

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

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

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

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

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

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

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

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible

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

#### 1. Source Code.

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

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

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

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

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

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

#### 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

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

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

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

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

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

#### 4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any

non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

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

#### 5. Conveying Modified Source Versions.

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

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

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

### 6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the

machine-readable Corresponding Source under the terms of this License, in one of these ways:

- a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.
- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work. A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

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

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains

a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

#### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

#### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

#### 10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to

make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting

any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

#### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

#### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different

permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

#### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

#### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

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

You should have received a copy of the GNU General Public License along with this program. If not, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>>.

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

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

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

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <a href="http://www.gnu.org/philosophy/why-not-lgpl.html">http://www.gnu.org/philosophy/why-not-lgpl.html</a>.

# 1.44 python-pip 22.2.2

### 1.44.1 Available under license:

The MIT License (MIT)

Copyright (c) 2017 Thomas Kluyver

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (C) 2016 Jason R Coombs < jaraco@jaraco.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# This is the MIT license

Copyright (c) 2010 ActiveState Software Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including

without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2010-2020 Benjamin Peterson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS

FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. Copyright (c) 2006-2022 by the respective authors (see AUTHORS file). All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Copyright (c) 2010 Jonathan Hartley

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holders, nor those of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED

WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed

with Licensor regarding such Contributions.

- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

# END OF TERMS AND CONDITIONS MIT License

Copyright (c) 2021 Taneli Hukkinen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights

to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2018, Tzu-ping Chung <uranusjr@gmail.com>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made under the terms of \*both\* these licenses.

Copyright (c) 2012 by Simon Sapin.

Some rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The names of the contributors may not be used to endorse or promote products derived from this software without specific

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Apache License

Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or

Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work

- or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work

by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov 3 19:04:19 2011#

This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt). This file can be found in the mozilla source tree:
http://mxr.mozilla.org/mozilla/source/security/nss/lib/ckfw/builtins/certdata.txt?raw=1#

It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php\_curl, or with
an Apache+mod\_ssl webserver for SSL client authentication.

Just configure this file as the SSLCACertificateFile.#

### \*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at http://mozilla.org/MPL/2.0/.

\*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

@(#) \$RCSfile: certdata.txt,v \$ \$Revision: 1.80 \$ \$Date: 2011/11/03 15:11:58 \$ Copyright (C) 2008-2011 INADA Naoki <songofacandy@gmail.com>

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

### A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derive	ed	Year		Own	er	GPL-
from			compatible? (1)				
0.9.0 thru	1.2		1991-1	995	CWI		yes
1.3 thru 1	.5.2 1.2		1995-	1999	CN	RI	yes
1.6	1.5.2	20	000	CN	RI	no	
2.0	1.6	20	00	BeC	pen.c	com	no
1.6.1	1.6	20	001	CN	RI	yes	(2)
2.1	2.0+1.6.	1	2001	P	SF	no	)
2.0.1	2.0+1.6	.1	2001	I	PSF	ye	es
2.1.1	2.1+2.0	.1	2001	I	PSF	ye	es
2.2	2.1.1	20	001	PSI	7	yes	
212	2 1 1	2	002	PS	F	ves	

2.1.3	2.1.2	2002	PSF	yes	
2.2.1	2.2	2002	PSF	yes	
2.2.2	2.2.1	2002	PSF	yes	
2.2.3	2.2.2	2003	PSF	yes	
2.3	2.2.2	2002-2003 PSF		yes	
2.3.1	2.3	2002-2003 PSF		yes	
2.3.2	2.3.1	2002-2	2002-2003 PSF		
2.3.3	2.3.2	2002-2	003 PSF	yes	
2.3.4	2.3.3	2004	PSF	yes	
2.3.5	2.3.4	2005	PSF	yes	
2.4	2.3	2004	PSF	yes	
2.4.1	2.4	2005	PSF	yes	
2.4.2	2.4.1	2005	PSF	yes	
2.4.3	2.4.2	2006	PSF	yes	
2.4.4	2.4.3	2006	PSF	yes	
2.5	2.4	2006	PSF	yes	
2.5.1	2.5	2007	PSF	yes	
2.5.2	2.5.1	2008	PSF	yes	
2.5.3	2.5.2	2008	PSF	yes	
2.6	2.5	2008	PSF	yes	
2.6.1	2.6	2008	PSF	yes	
2.6.2	2.6.1	2009	PSF	yes	
2.6.3	2.6.2	2009	PSF	yes	
2.6.4	2.6.3	2009	PSF	yes	
2.6.5	2.6.4	2010	PSF	yes	
3.0	2.6	2008	008 PSF		
3.0.1	3.0	2009	PSF	yes	
3.1	3.0.1	2009	PSF	yes	
3.1.1	3.1	2009	PSF	yes	
3.1.2	3.1	2010	PSF	yes	
3.2	3.1	2010	PSF	yes	

### Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

### B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

\_\_\_\_\_\_

### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

-----

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

### BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

-----

### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the

permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS

# A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

### CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE

FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Deriv	ed Ye	ar O	wner	GPL-	
		co	compatible? (1)			
0.9.0 thru	1.2	1991-	1995 C	WI	yes	
1.3 thru 1.5.2 1.2 1995-1999 CNRI yes						
1.6	1.5.2	2000	CNRI	no		
2.0	1.6	2000	BeOpe	en.com	no	
1.6.1	1.6	2001	CNRI	yes	s (2)	
2.1	2.0+1.6	5.1 2001	PSF	nc nc	)	
2.0.1	2.0+1.6	5.1 2001	PSI	F y	es	
2.1.1	2.1+2.0	0.1 2001	PSI	F y	es	
2.1.2	2.1.1	2002	PSF	yes		
2.1.3	2.1.2	2002	PSF	yes		
2.2 and al	pove 2.1	.1 20	01-now	PSF	yes	

Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

## B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY

### DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.
- 7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".
- 3. In the event Licensee prepares a derivative work that is based on

or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.

- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

**ACCEPT** 

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam,

The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. BSD 3-Clause License

Copyright (c) 2013-2021, Kim Davies All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) Donald Stufft and individual contributors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that

there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

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

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

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

operating system, as well as its variant, the GNU/Linux operating system.

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

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

# GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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

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

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

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

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

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

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

- 2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) The modified work must itself be a software library.
  - b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
  - c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
  - d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

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

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of

this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it

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

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

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

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

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

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

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

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

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

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

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

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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

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

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified

executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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

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

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

based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

- b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.
- 11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

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

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

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

- 12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

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

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

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

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

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

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

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

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it! Copyright 2012-2021 Eric Larson

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

Copyright (c) 2008-present The pip developers (see AUTHORS.txt file)

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE

LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,

including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual,

worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf

of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

> Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE. REPRODUCTION. AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You

meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor,

except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.45 asynctest 0.13.0

### 1.45.1 Available under license:

\*\*Copyright 2015 Martin Richard\*\*

\* \* \*

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.46 py3-appdirs 1.4.4-r3

### 1.46.1 Available under license:

# This is the MIT license

Copyright (c) 2010 ActiveState Software Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to

permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.47 tre 0.8.0

### 1.47.1 Available under license:

This is the license, copyright notice, and disclaimer for TRE, a regex matching package (library and tools) with support for approximate matching.

Copyright (c) 2001-2009 Ville Laurikari <vl@iki.fi> All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.48 cryptography 38.0.1

## 1.48.1 Available under license:

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to cryptography are made under the terms of \*both\* these licenses.

The code used in the OS random engine is derived from CPython, and is licensed under the terms of the PSF License Agreement.

Copyright (c) Individual contributors.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of PyCA Cryptography nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 2.7.12 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 2.7.12 alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright 2001-2016 Python Software Foundation; All Rights

Reserved" are retained in Python 2.7.12 alone or in any derivative version prepared by Licensee.

- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 2.7.12 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 2.7.12.
- 4. PSF is making Python 2.7.12 available to Licensee on an "AS IS" basis.

  PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 2.7.12 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 2.7.12 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 2.7.12, OR ANY DERIVATIVE THEREOF. EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python 2.7.12, Licensee agrees to be bound by the terms and conditions of this License Agreement.

Apache License Version 2.0, January 2004 https://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or

documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill,

work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

https://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.49 python-pip 22.0.4

### 1.49.1 Available under license:

Copyright (c) 2007 Ian Bicking and Contributors Copyright (c) 2009 Ian Bicking, The Open Planning Project Copyright (c) 2011-2013 The virtualenv developers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. The MIT License (MIT)

Copyright (c) 2017 Thomas Kluyver

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (C) 2016 Jason R Coombs < jaraco@jaraco.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# This is the MIT license

Copyright (c) 2010 ActiveState Software Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2010-2020 Benjamin Peterson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You

can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those

libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

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

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

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

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

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other

program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

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

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

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

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

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

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

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

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

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

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

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

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

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2,

instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

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

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

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

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

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

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

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

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

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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

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

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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

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

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
  - b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or

distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.
- 11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

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

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

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

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the

original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF

## SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

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

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

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

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

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

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

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

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it!

Copyright (c) 2010 Jonathan Hartley All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holders, nor those of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License
Version 2.0, January 2004
http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the

outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

- copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and

do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS MIT License

Copyright (c) 2021 Taneli Hukkinen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2018, Tzu-ping Chung <uranusjr@gmail.com>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made

under the terms of \*both\* these licenses. Pylons Project Contributor Agreement

The submitter agrees by adding his or her name within the section below named "Contributors" and submitting the resulting modified document to the canonical shared repository location for this software project (whether directly, as a user with "direct commit access", or via a "pull request"), he or she is signing a contract electronically. The submitter becomes a Contributor after a) he or she signs this document by adding their name beneath the "Contributors" section below, and b) the resulting document is accepted into the canonical version control repository.

#### Treatment of Account

-----

Contributor will not allow anyone other than the Contributor to use his or her username or source repository login to submit code to a Pylons Project source repository. Should Contributor become aware of any such use, Contributor will immediately by notifying Agendaless Consulting.

Notification must be performed by sending an email to webmaster@agendaless.com. Until such notice is received, Contributor will be presumed to have taken all actions made through Contributor's account. If the Contributor has direct commit access, Agendaless Consulting will have complete control and discretion over capabilities assigned to Contributor's account, and may disable Contributor's account for any reason at any time.

#### Legal Effect of Contribution

-----

Upon submitting a change or new work to a Pylons Project source Repository (a "Contribution"), you agree to assign, and hereby do assign, a one-half interest of all right, title and interest in and to copyright and other intellectual property rights with respect to your new and original portions of the Contribution to Agendaless Consulting. You and Agendaless Consulting each agree that the other shall be free to exercise any and all exclusive rights in and to the Contribution, without accounting to one another, including without limitation, the right to license the Contribution to others under the Repoze Public License. This agreement shall run with title to the Contribution. Agendaless Consulting does not convey to you any right, title or interest in or to the Program or such portions of the Contribution that were taken from the Program. Your transmission of a submission to the Pylons Project source Repository and marks of identification concerning the Contribution itself constitute your intent to contribute and your assignment of the work in accordance with the provisions of this Agreement.

License Terms

Code committed to the Pylons Project source repository (Committed Code) must be governed by the Repoze Public License (http://repoze.org/LICENSE.txt, aka "the RPL") or another license acceptable to Agendaless Consulting. Until Agendaless Consulting declares in writing an acceptable license other than the RPL, only the RPL shall be used. A list of exceptions is detailed within the "Licensing Exceptions" section of this document, if one exists.

Contributor represents and warrants that the Committed Code does not violate the rights of any person or entity, and that the Contributor has legal authority to enter into this Agreement and legal authority over Contributed Code. Further, Contributor indemnifies Agendaless Consulting against violations.
Cryptography
Contributor understands that cryptographic code may be subject to government regulations with which Agendaless Consulting and/or entities using Committed Code must comply. Any code which contains any of the items listed below must not be checked-in until Agendaless Consulting staff has been notified and has approved such contribution in writing.
- Cryptographic capabilities or features
- Calls to cryptographic features
- User interface elements which provide context relating to cryptography
- Code which may, under casual inspection, appear to be cryptographic.
Notices 
Contributor confirms that any notices required will be included in any Committed Code.
Licensing Exceptions
None.
List of Contributors

The below-signed are contributors to a code repository that is part of the project named "Translationstring". Each below-signed contributor has read, understands and agrees to the terms above in the section within this document entitled "Pylons Project Contributor Agreement" as of the date beside his or her name.

#### Contributors

-----

- Chris McDonough, 2011/02/16
- Wichert Akkerman, 2012/02/02 Copyright (c) 2012 by Simon Sapin.

Some rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The names of the contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see http://www.cwi.nl) in the Netherlands as a successor of a language called ABC. Guido remains Python's

principal author, although it includes many contributions from others.

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derive	ed	Year	r	Own	ner	GPL
1	from				com	patible	e? (1)
0.9.0 thru	1.2		1991-1	995	CW	I	yes
1.3 thru 1.	5.2 1.2		1995-	199	9 CN	IRI	yes
1.6	1.5.2	2	000	Cl	NRI	no	
2.0	1.6	20	000	Be	Open.	com n	10
1.6.1	1.6	2	001	Cl	NRI	yes	(2)
2.1	2.0+1.6.	1	2001		PSF	no	
2.0.1	2.0+1.6	.1	2001		PSF	ye	S
2.1.1	2.1+2.0	.1	2001		PSF	ye	S
2.2	2.1.1	2	001	PS	F	yes	
2.1.2	2.1.1	2	2002	P	SF	yes	
2.1.3	2.1.2	2	2002	P	SF	yes	
2.2.1	2.2	2	002	PS	F	yes	
2.2.2	2.2.1	2	2002	P	SF	yes	
2.2.3	2.2.2	2	2003	P	SF	yes	
2.3	2.2.2	2	002-20	03	PSF	ye	s
2.3.1	2.3	2	002-20	03	PSF	ye	S
2.3.2	2.3.1	2	2002-20	003	PSF	y	es
2.3.3	2.3.2	2	2002-20	003	PSF	y	es
2.3.4	2.3.3	2	2004	P	SF	yes	
2.3.5	2.3.4	2	2005	P	SF	yes	
2.4	2.3	20	004	PS	F	yes	
2.4.1	2.4	2	005	PS	F	yes	
2.4.2	2.4.1	2	2005	P	SF	yes	
2.4.3	2.4.2	2	2006	P	SF	yes	

2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
2.7	2.6	2010	PSF	yes

#### Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

## B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

#### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Python Software Foundation; All Rights Reserved" are retained in Python alone or

in any derivative version prepared by Licensee.

- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF. EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

## BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

#### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform

and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.

- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF. EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.
- 7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly,

prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".

- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions.

  Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This

License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.

8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

**ACCEPT** 

#### CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

\_\_\_\_\_

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. Apache License

Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed

as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov 3 19:04:19 2011# This is a bundle of X.509 certificates of public Certificate Authorities (CA). These were automatically extracted from Mozilla's root certificates file (certdata.txt). This file can be found in the mozilla source tree: http://mxr.mozilla.org/mozilla/source/security/nss/lib/ckfw/builtins/certdata.txt?raw=1# It contains the certificates in PEM format and therefore can be directly used with curl / libcurl / php\_curl, or with an Apache+mod\_ssl webserver for SSL client authentication. Just configure this file as the SSLCACertificateFile.#

#### \*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at http://mozilla.org/MPL/2.0/.

#### \*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

@(#) \$RCSfile: certdata.txt,v \$ \$Revision: 1.80 \$ \$Date: 2011/11/03 15:11:58 \$ Copyright (C) 2008-2011 INADA Naoki <songofacandy@gmail.com>

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

#### A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Deriv	ed Y	/ear	Owner	GPL
	from			compat	ible? (1)
0.9.0 thru			1-1995		yes
1.3 thru 1	1.5.2 1.2	19	95-1999	) CNRI	yes
1.6	1.5.2	2000	CN	RI r	10
2.0	1.6	2000	BeC	Open.com	n no
1.6.1	1.6	2001	CN	IRI y	es (2)
2.1	2.0+1.6	.1 200	)1 P	PSF	no
2.0.1	2.0+1.6	5.1 20	01	PSF	yes
2.1.1	2.1+2.0	0.1 20	01	PSF	yes
2.2	2.1.1	2001	PS:	F ye	es
2.1.2	2.1.1	2002	2 PS	F y	es
2.1.3	2.1.2	2002	2 PS	F y	es
2.2.1	2.2	2002	PS]	F ye	es
2.2.2	2.2.1	2002	2 PS	F y	es
2.2.3	2.2.2	2003	B PS	F y	es
2.3	2.2.2	2002	-2003	PSF	yes
2.3.1	2.3	2002	-2003	PSF	yes
2.3.2	2.3.1	2002	2-2003	PSF	yes
2.3.3	2.3.2	2002	2-2003	PSF	yes
2.3.4	2.3.3	2004	4 PS	F y	es
2.3.5	2.3.4	2005	5 PS	F y	es
2.4	2.3	2004	PSF	-	
2.4.1	2.4	2005	PS]	F ye	es
2.4.2	2.4.1	2005	5 PS		es
2.4.3	2.4.2	2006	5 PS	-	es
2.4.4	2.4.3	2006	5 PS	SF y	es
2.5	2.4	2006	PSF	-	
2.5.1	2.5	2007	PS]	F ye	es
2.5.2	2.5.1	2008	B PS	-	es
2.5.3	2.5.2	2008	B PS	SF y	es
2.6	2.5	2008	PSF	ye:	S
2.6.1	2.6	2008	PS:	-	
2.6.2	2.6.1	2009	) PS		es
2.6.3	2.6.2	2009	) PS	_	es
2.6.4	2.6.3	2009	) PS		es
2.6.5	2.6.4	2010			es
3.0	2.6	2008	PSF	•	
3.0.1	3.0	2009		•	
3.1	3.0.1	2009		•	
				-	

3.1.1	3.1	2009	PSF	yes
3.1.2	3.1	2010	PSF	yes
3.2	3.1	2010	PSF	ves

#### Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

## B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

#### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

-----

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS"

basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF. EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE	AGREEMENT FOR	PYTHON 2.0

#### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS

FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.
- 7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

#### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with

- Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

**ACCEPT** 

#### CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

\_\_\_\_\_

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=========

#### Contributors

=========

- \* Alex Grnholm
- \* Alice Bevan-McGregor
- \* Arfrever Frehtes Taifersar Arahesis
- \* Christophe Combelles
- \* Daniel Stutzbach
- \* Daniel Holth
- \* Hanno Schlichting
- \* Jannis Leidel
- \* Jason R. Coombs
- \* Jim Fulton
- \* Jonathan Lange
- \* Justin Azoff
- \* Lennart Regebro
- \* Marc Abramowitz
- \* Martin von Lwis
- \* Noufal Ibrahim
- \* Pete Hollobon
- \* Philip Jenvey
- \* Reinout van Rees
- \* Robert Myers

- \* Stefan H. Holek
- \* Tarek Ziad
- \* Toshio Kuratomi

If you think you name is missing, please add it (alpha order by first name) A. HISTORY OF THE SOFTWARE

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Deriv	ed	Year	•	Own	er	GPL-
	from				com	patibl	e? (1)
0.9.0 thru	1.2	1	991-1	995	CW	[	yes
1.3 thru 1	.5.2 1.2		1995-	1999	) CN	RI	yes
1.6	1.5.2	20	00	CN	IRI	no	
2.0	1.6	200	00	BeC	Open.o	com 1	10
1.6.1	1.6	20	01	CN	IRI	yes	(2)
2.1	2.0+1.6	5.1 2	2001	F	PSF	no	
2.0.1	2.0+1.0	5.1	2001	]	PSF	yε	es
2.1.1	2.1+2.0	0.1	2001	]	PSF	yε	es
2.1.2	2.1.1	20	002	PS	F	yes	
2.1.3	2.1.2	20	002	PS	F	yes	
2.2 and at	ove 2.1	.1	200	1-no	w P	SF	yes

Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

В.	TERMS	SAND	COND	ITIONS F	OR AC	CESSINC	GOR OT	THERWISE	USING P	PYTHON

#### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

#### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS

# AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF. EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.
- 7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

#### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".

- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT	AC	CEPT
--------	----	------

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. License

A copyright notice accompanies this license document that identifies the copyright holders.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions in source code must retain the accompanying copyright notice, this list of conditions, and the following disclaimer.
- Redistributions in binary form must reproduce the accompanying copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Names of the copyright holders must not be used to endorse or promote products derived from this software without prior written permission from the copyright holders.
- 4. If any files are modified, you must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

Disclaimer

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS "AS IS" AND

ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

**BSD 3-Clause License** 

Copyright (c) 2013-2021, Kim Davies All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

```
# Copyright (c) 2012 Georgios Verigakis <verigak@gmail.com>
```

#

- # Permission to use, copy, modify, and distribute this software for any
- # purpose with or without fee is hereby granted, provided that the above
- # copyright notice and this permission notice appear in all copies.

#

- # THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES
- # WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF

# MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR # ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES # WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN # ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF # OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. argparse is (c) 2006-2009 Steven J. Bethard <steven.bethard@gmail.com>.

The argparse module was contributed to Python as of Python 2.7 and thus was licensed under the Python license. Same license applies to all files in the argparse package project.

For details about the Python License, please see doc/Python-License.txt.

History

Before (and including) argparse 1.1, the argparse package was licensed under Apache License v2.0.

After argparse 1.1, all project files from the argparse project were deleted due to license compatibility issues between Apache License 2.0 and GNU GPL v2.

The project repository then had a clean start with some files taken from Python 2.7.1, so definitely all files are under Python License now. Copyright (c) 2006-2021 by the respective authors (see AUTHORS file). All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE

#### OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2006-2013 James Graham and other contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

#### Contributors

\_\_\_\_\_

- \* Alex Grnholm
- \* Alice Bevan-McGregor
- \* Arfrever Frehtes Taifersar Arahesis
- \* Christophe Combelles
- \* Daniel Stutzbach
- \* Daniel Holth
- \* Dirley Rodrigues
- \* Donald Stufft
- \* Grigory Petrov
- \* Hanno Schlichting
- \* Jannis Leidel
- \* Jason R. Coombs
- \* Jim Fulton
- \* Jonathan Lange
- \* Justin Azoff
- \* Lennart Regebro
- \* Marc Abramowitz
- \* Martin von Lwis
- \* Noufal Ibrahim
- \* Pete Hollobon
- \* Phillip J. Eby
- \* Philip Jenvey
- \* Philip Thiem

- \* Reinout van Rees
- \* Robert Myers
- \* Stefan H. Holek
- \* Tarek Ziad
- \* Toshio Kuratomi

If you think you name is missing, please add it (alpha order by first name) Copyright (c) 2011 Agendaless Consulting and Contributors. (http://www.agendaless.com), All Rights Reserved
MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) Donald Stufft and individual contributors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL

DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Copyright 2012-2021 Eric Larson

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2008-present The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. Permission is hereby granted, free of charge, to any person obtaining

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed

with Licensor regarding such Contributions.

- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.
  Copyright (c) 2008-2013 The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

License for Bundle of CA Root Certificates (pip/cacert.pem)

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

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

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or,

within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all

other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.50 pep517 0.12.0

### 1.50.1 Available under license:

The MIT License (MIT)

Copyright (c) 2017 Thomas Kluyver

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.51 python-certifi 2022.09.24

### 1.51.1 Available under license:

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov 3 19:04:19 2011#

This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt). This file can be found in the mozilla source tree:
https://hg.mozilla.org/mozilla-central/file/tip/security/nss/lib/ckfw/builtins/certdata.txt
It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php\_curl, or with
an Apache+mod\_ssl webserver for SSL client authentication.
Just configure this file as the SSLCACertificateFile.#

#### \*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at http://mozilla.org/MPL/2.0/.

\*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

@(#) \$RCSfile: certdata.txt,v \$ \$Revision: 1.80 \$ \$Date: 2011/11/03 15:11:58 \$

# 1.52 pcre 10.40-r0

## 1.52.1 Available under license:

PCRE2 LICENCE

Please see the file LICENCE in the PCRE2 distribution for licensing details.

End
PCRE2 LICENCE

PCRE2 is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Releases 10.00 and above of PCRE2 are distributed under the terms of the "BSD" licence, as specified below, with one exemption for certain binary redistributions. The documentation for PCRE2, supplied in the "doc" directory, is distributed under the same terms as the software itself. The data in the testdata directory is not copyrighted and is in the public domain.

The basic library functions are written in C and are freestanding. Also included in the distribution is a just-in-time compiler that can be used to optimize pattern matching. This is an optional feature that can be omitted when the library is built.

#### THE BASIC LIBRARY FUNCTIONS

-----

Written by: Philip Hazel Email local part: Philip.Hazel Email domain: gmail.com

Retired from University of Cambridge Computing Service, Cambridge, England.

Copyright (c) 1997-2022 University of Cambridge All rights reserved.

#### PCRE2 JUST-IN-TIME COMPILATION SUPPORT

\_\_\_\_\_

Written by: Zoltan Herczeg Email local part: hzmester Email domain: freemail.hu Copyright(c) 2010-2022 Zoltan Herczeg All rights reserved.

#### STACK-LESS JUST-IN-TIME COMPILER

\_\_\_\_\_

Written by: Zoltan Herczeg Email local part: hzmester Email domain: freemail.hu

Copyright(c) 2009-2022 Zoltan Herczeg All rights reserved.

#### THE "BSD" LICENCE

-----

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notices, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notices, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the University of Cambridge nor the names of any contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

EXEMPTION FOR BINARY LIBRARY-LIKE PACKAGES

The second condition in the BSD licence (covering binary redistributions) does not apply all the way down a chain of software. If binary package A includes PCRE2, it must respect the condition, but if package B is software that includes package A, the condition is not imposed on package B unless it uses PCRE2 independently.

#### End

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE. EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.53 urllib3 1.26.6-1.ph1

### 1.53.1 Available under license:

MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.54 doteny-linter 0.3.0

### 1.54.1 Available under license:

MIT License

Copyright (c) 2018 wemake.services

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.55 colorama 0.4.4

### 1.55.1 Available under license:

Copyright (c) 2010 Jonathan Hartley All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice,

this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of the copyright holders, nor those of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.56 visual-studio-runtime 14.00.24210.0

## 1.56.1 Available under license:

THIRD-PARTY SOFTWARE NOTICES AND INFORMATION

Do Not Translate or Localize

This project incorporates components from the projects listed below. The original copyright notices and the licenses under which Microsoft received such components are set forth below. Microsoft reserves all rights not expressly granted

herein, whether by implication, estoppel or otherwise.

%% winjs version 4.4.0 (https://github.com/winjs/winjs)
WinJS
Copyright (c) Microsoft Corporation
All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the ""Software""), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

MIT License

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED \*AS IS\*, WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF winjs NOTICES AND INFORMATION

%% string\_scorer version 0.1.20 (https://github.com/joshaven/string\_score)

\_\_\_\_\_

This software is released under the MIT license:

Copyright (c) Joshaven Potter

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF string\_scorer NOTICES AND INFORMATION

%% chjj-marked NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF chij-marked NOTICES AND INFORMATION

### THIRD-PARTY SOFTWARE NOTICES AND INFORMATION

For Microsoft vscode-theme-seti

This file is based on or incorporates material from the projects listed below ("Third Party OSS"). The original copyright

notice and the license under which Microsoft received such Third Party OSS, are set forth below. Such licenses and notice

are provided for informational purposes only. Microsoft licenses the Third Party OSS to you under the licensing terms for

the Microsoft product or service. Microsoft reserves all other rights not expressly granted under this agreement, whether

by implication, estoppel or otherwise.

1. Seti UI - A subtle dark colored UI theme for Atom. (https://github.com/jesseweed/seti-ui)

Copyright (c) 2014 Jesse Weed

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be

included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. Monarch definition & snippets:

The MIT License (MIT)

Copyright (c) 2015 David Owens II

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Text mate grammar:

Copyright (c) 2014 Darin Morrison

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2011-2014, Christopher Jeffrey (https://github.com/chjj/)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The MIT License (MIT)

Copyright (c) 2016 Microsoft Corporation

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

MIT License

All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

microsoft-vscode

#### THIRD-PARTY SOFTWARE NOTICES AND INFORMATION

Do Not Translate or Localize

This project incorporates components from the projects listed below. The original copyright notices and the licenses under which Microsoft received such components are set forth below. Microsoft reserves all rights not expressly granted herein, whether by implication, estoppel or otherwise.

- 1. atom/language-c (https://github.com/atom/language-c)
- 2. atom/language-clojure (https://github.com/atom/language-clojure)
- 3. atom/language-coffee-script (https://github.com/atom/language-coffee-script)
- 4. atom/language-css (https://github.com/atom/language-css)
- 5. atom/language-java (https://github.com/atom/language-java)
- 6. atom/language-objective-c (https://github.com/atom/language-objective-c)
- 7. atom/language-sass version 0.52.0 (https://github.com/atom/language-sass)
- 8. atom/language-xml (https://github.com/atom/language-xml)
- 9. Benvie/JavaScriptNext.tmLanguage (https://github.com/Benvie/JavaScriptNext.tmLanguage)
- 10. chjj-marked version 0.3.6 (https://github.com/npmcomponent/chjj-marked)
- 11. chriskempson/tomorrow-theme (https://github.com/chriskempson/tomorrow-theme)
- 12. Colorsublime-Themes version 0.1.0 (https://github.com/Colorsublime/Colorsublime-Themes)
- 13. daaain/Handlebars (https://github.com/daaain/Handlebars)
- 14. davidrios/jade-tmbundle (https://github.com/davidrios/jade-tmbundle)
- 15. definitelytyped (https://github.com/DefinitelyTyped/DefinitelyTyped)
- 16. demyte/language-cshtml (https://github.com/demyte/language-cshtml)
- 17. dotnet/csharp-tmLanguage version 0.1.0 (https://github.com/dotnet/csharp-tmLanguage)
- 18. freebroccolo/atom-language-swift (https://github.com/freebroccolo/atom-language-swift)

- 19. HTML 5.1 W3C Working Draft version 08 October 2015 (http://www.w3.org/TR/2015/WD-html51-20151008/)
- 20. Ionic documentation version 1.2.4 (https://github.com/ionic-team/ionic-site)
- 21. ionide/ionide-fsgrammar (https://github.com/ionide/ionide-fsgrammar)
- 22. js-beautify version 1.6.8 (https://github.com/beautify-web/js-beautify)
- 23. Jxck/assert version 1.0.0 (https://github.com/Jxck/assert)
- 24. language-docker (https://github.com/moby/moby)
- 25. language-go version 0.39.0 (https://github.com/atom/language-go)
- 26. language-less (https://github.com/atom/language-less)
- 27. language-php (https://github.com/atom/language-php)
- 28. language-rust version 0.4.9 (https://github.com/zargony/atom-language-rust)
- 29. MagicStack/MagicPython (https://github.com/MagicStack/MagicPython)
- 30. Microsoft/TypeScript-TmLanguage version 0.0.1 (https://github.com/Microsoft/TypeScript-TmLanguage)
- 31. octicons-code version 3.1.0 (https://octicons.github.com)
- 32. octicons-font version 3.1.0 (https://octicons.github.com)
- 33. seti-ui version 0.1.0 (https://github.com/jesseweed/seti-ui)
- 34. shaders-tmLanguage version 0.1.0 (https://github.com/tgjones/shaders-tmLanguage)
- 35. string\_scorer version 0.1.20 (https://github.com/joshaven/string\_score)
- 36. sublimehq/Packages (https://github.com/sublimehq/Packages)
- 37. SublimeText/PowerShell (https://github.com/SublimeText/PowerShell)
- 38. textmate/asp.vb.net.tmbundle (https://github.com/textmate/asp.vb.net.tmbundle)
- 39. textmate/c.tmbundle (https://github.com/textmate/c.tmbundle)
- 40. textmate/diff.tmbundle (https://github.com/textmate/diff.tmbundle)
- 41. textmate/git.tmbundle (https://github.com/textmate/git.tmbundle)
- 42. textmate/groovy.tmbundle (https://github.com/textmate/groovy.tmbundle)
- 43. textmate/html.tmbundle (https://github.com/textmate/html.tmbundle)
- 44. textmate/ini.tmbundle (https://github.com/textmate/ini.tmbundle)
- 45. textmate/javascript.tmbundle (https://github.com/textmate/javascript.tmbundle)
- 46. textmate/lua.tmbundle (https://github.com/textmate/lua.tmbundle)
- 47. textmate/make.tmbundle (https://github.com/textmate/make.tmbundle)
- 48. textmate/markdown.tmbundle (https://github.com/textmate/markdown.tmbundle)
- 49. textmate/perl.tmbundle (https://github.com/textmate/perl.tmbundle)
- 50. textmate/r.tmbundle (https://github.com/textmate/r.tmbundle)
- 51. textmate/ruby.tmbundle (https://github.com/textmate/ruby.tmbundle)
- 52. textmate/shellscript.tmbundle (https://github.com/textmate/shellscript.tmbundle)
- 53. textmate/sql.tmbundle (https://github.com/textmate/sql.tmbundle)
- 54. textmate/yaml.tmbundle (https://github.com/textmate/yaml.tmbundle)
- 55. TypeScript-TmLanguage version 0.1.8 (https://github.com/Microsoft/TypeScript-TmLanguage)
- 56. vscode-swift version 0.0.1 (https://github.com/owensd/vscode-swift)

## %% atom/language-c NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/textmate/c.tmbundle and distributed under the following license, located in `README.mdown`:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

\_\_\_\_\_

END OF atom/language-c NOTICES AND INFORMATION

%% atom/language-clojure NOTICES AND INFORMATION BEGIN HERE

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE

LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/mmcgrana/textmate-clojure and distributed under the following license, located in `LICENSE.md`:

The MIT License (MIT)

Copyright (c) 2010- Mark McGranaghan

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF atom/language-clojure NOTICES AND INFORMATION

%% atom/language-coffee-script NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be

included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/jashkenas/coffee-script-tmbundle and distributed under the following license, located in `LICENSE`:

Copyright (c) 2009-2014 Jeremy Ashkenas

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF atom/language-coffee-script NOTICES AND INFORMATION

%% atom/language-css NOTICES AND INFORMATION BEGIN HERE

The MIT License (MIT)

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/textmate/css.tmbundle and distributed under the following license, located in `README.mdown`:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

\_\_\_\_\_

END OF atom/language-css NOTICES AND INFORMATION

%% atom/language-java NOTICES AND INFORMATION BEGIN HERE

The MIT License (MIT)

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/textmate/java.tmbundle and distributed under the following license. located in `README.mdown`:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

\_\_\_\_\_

END OF atom/language-java NOTICES AND INFORMATION

%% atom/language-objective-c NOTICES AND INFORMATION BEGIN HERE

The MIT License (MIT)

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/textmate/objective-c.tmbundle and distributed under the following license, located in `README.mdown`:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

\_\_\_\_\_

END OF atom/language-objective-c NOTICES AND INFORMATION

%% atom/language-sass NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/alexsancho/Sass.tmbundle and distributed under the following license, located in `LICENSE.md`:

Copyright (c) 2012 Alex Sancho, http://alexsancho.name/

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be

included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF atom/language-sass NOTICES AND INFORMATION

%% atom/language-xml NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/textmate/xml.tmbundle and distributed under the following license, located in `README.mdown`:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

\_\_\_\_\_

END OF atom/language-xml NOTICES AND INFORMATION

The MIT License (MIT)

Copyright (c) 2015 simonzack, zertosh, benvie

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF Benvie/JavaScriptNext.tmLanguage NOTICES AND INFORMATION

%% chjj-marked NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2011-2014, Christopher Jeffrey (https://github.com/chjj/)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,

OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

END OF chij-marked NOTICES AND INFORMATION

%% chriskempson/tomorrow-theme NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

following conditions:

Copyright (C) 2013 Chris Kempson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF chriskempson/tomorrow-theme NOTICES AND INFORMATION

%% Colorsublime-Themes NOTICES AND INFORMATION BEGIN HERE

Copyright (c) 2015 Colorsublime.com

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER

LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. END OF Colorsublime-Themes NOTICES AND INFORMATION %% daaain/Handlebars NOTICES AND INFORMATION BEGIN HERE -- Credits Adapted from the great sublime-text-handlebars package by Nicholas Westlake. Thanks a lot to all the generous contributors (in alphabetical order): @bittersweetryan, @bradcliffe, @calumbrodie, @duncanbeevers, @hlvnst, @jonschlinkert, @Krutius, @samselikoff, @utkarshkukreti, @zeppelin -- License (The MIT License) Copyright (c) daaain/Handlebars project authors Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the 'Software'), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions: The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software. THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR

THE SOFTWARE IS PROVIDED 'AS IS', WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_\_

END OF daaain/Handlebars NOTICES AND INFORMATION

%% davidrios/jade-tmbundle NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2014 David Rios

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to

use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to

whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES

OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE

LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN

CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE

\_\_\_\_\_

END OF davidrios/jade-tmbundle NOTICES AND INFORMATION

%% definitelytyped NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

This project is licensed under the MIT license.

Copyrights are respective of each contributor listed at the beginning of each definition file.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF definitelytyped NOTICES AND INFORMATION

%% demyte/language-cshtml NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2014 James Summerton

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to

permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF demyte/language-cshtml NOTICES AND INFORMATION

%% dotnet/csharp-tmLanguage NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

MIT License

Copyright (c) 2016 .NET Foundation

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF dotnet/csharp-tmLanguage NOTICES AND INFORMATION

%% freebroccolo/atom-language-swift NOTICES AND INFORMATION BEGIN HERE

The MIT License (MIT)

Copyright (c) 2014 Darin Morrison

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF freebroccolo/atom-language-swift NOTICES AND INFORMATION

%% HTML 5.1 W3C Working Draft NOTICES AND INFORMATION BEGIN HERE

Copyright 2015 W3C (MIT, ERCIM, Keio, Beihang). This software or document includes material copied from or derived from HTML 5.1 W3C Working Draft (http://www.w3.org/TR/2015/WD-html51-20151008/.)

THIS DOCUMENT IS PROVIDED "AS IS," AND COPYRIGHT HOLDERS MAKE NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR TITLE; THAT THE CONTENTS OF THE DOCUMENT ARE SUITABLE FOR ANY PURPOSE; NOR THAT THE IMPLEMENTATION OF SUCH CONTENTS WILL NOT INFRINGE ANY THIRD PARTY PATENTS, COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS.

COPYRIGHT HOLDERS WILL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF ANY USE OF THE DOCUMENT OR THE PERFORMANCE OR IMPLEMENTATION OF THE CONTENTS THEREOF.

The name and trademarks of copyright holders may NOT be used in advertising or publicity pertaining to this document or its contents

without specific, written prior permission. Title to copyright in this document will at all times remain with copyright holders.

\_\_\_\_\_

END OF HTML 5.1 W3C Working Draft NOTICES AND INFORMATION

%% Ionic documentation NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

Copyright Drifty Co. http://drifty.com/.

Version 2.0, January 2004

http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been

received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:

You must give any other recipients of the Work or Derivative Works a copy of this License; and

You must cause any modified files to carry prominent notices stating that You changed the files; and

You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License. You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product

names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS
-----------------------------

END OF Ionic documentation NOTICES AND INFORMATION

%% ionide/ionide-fsgrammar NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2015 Krzysztof Cieslak

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF ionide/ionide-fsgrammar NOTICES AND INFORMATION

%% js-beautify NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2007-2017 Einar Lielmanis, Liam Newman, and contributors.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF js-beautify NOTICES AND INFORMATION

%% Jxck/assert NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2011 Jxck

Originally from node.js (http://nodejs.org)

Copyright Joyent, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_\_

END OF Jxck/assert NOTICES AND INFORMATION

%% language-docker NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_\_

Apache License

Version 2.0, January 2004 https://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or

Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work

- or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work

- by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright 2013-2017 Docker, Inc.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

https://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

\_\_\_\_\_

END OF language-docker NOTICES AND INFORMATION

%% language-go NOTICES AND INFORMATION BEGIN HERE

The MIT License (MIT)

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/rsms/Go.tmbundle and distributed under the following license, located in `LICENSE`:

Copyright (c) 2009 Rasmus Andersson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal

in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The Go Template grammar was derived from GoSublime located at https://github.com/DisposaBoy/GoSublime and distributed under the following license, located in `LICENSE.md`:

Copyright (c) 2012 The GoSublime Authors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

END OF language-go NOTICES AND INFORMATION

%% language-less NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/textmate/less.tmbundle and distributed under the following license, located in `LICENSE.md`:

Copyright (c) 2010 Scott Kyle and Rasmus Andersson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF language-less NOTICES AND INFORMATION

%% language-php NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2014 GitHub Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package was derived from a TextMate bundle located at https://github.com/textmate/php.tmbundle and distributed under the following license, located in `README.mdown`:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

END OF language-php NOTICES AND INFORMATION

%% language-rust NOTICES AND INFORMATION BEGIN HERE

The MIT License (MIT)

Copyright `2013` `Andreas Neuhaus` `http://zargony.com/`

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

END OF language-rust NOTICES AND INFORMATION

%% MagicStack/MagicPython NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License

Copyright (c) 2015-present MagicStack Inc. http://magic.io

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

END OF MagicStack/MagicPython NOTICES AND INFORMATION

%% Microsoft/TypeScript-TmLanguage NOTICES AND INFORMATION BEGIN HERE

Copyright (c) Microsoft Corporation. All rights reserved.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted"

means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and

attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the

appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

\_\_\_\_\_

END OF Microsoft/TypeScript-TmLanguage NOTICES AND INFORMATION

%% octicons-code NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

The MIT License (MIT)

(c) 2012-2015 GitHub

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF octicons-code NOTICES AND INFORMATION

%% octions-font NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

(c) 2012-2015 GitHub

SIL OPEN FONT LICENSE Version 1.1 - 26 February 2007

#### **PREAMBLE**

The goals of the Open Font License (OFL) are to stimulate worldwide development of collaborative font projects, to support the font creation efforts of academic and linguistic communities, and to provide a free and open framework in which fonts may be shared and improved in partnership with others.

The OFL allows the licensed fonts to be used, studied, modified and redistributed freely as long as they are not sold by themselves. The fonts, including any derivative works, can be bundled, embedded, redistributed and/or sold with any software provided that any reserved names are not used by derivative works. The fonts and derivatives, however, cannot be released under any other type of license. The requirement for fonts to remain under this license does not apply to any document created using the fonts or their derivatives.

#### **DEFINITIONS**

"Font Software" refers to the set of files released by the Copyright Holder(s) under this license and clearly marked as such. This may include source files, build scripts and documentation.

"Reserved Font Name" refers to any names specified as such after the copyright statement(s).

"Original Version" refers to the collection of Font Software components as distributed by the Copyright Holder(s).

"Modified Version" refers to any derivative made by adding to, deleting, or substituting -- in part or in whole -- any of the components of the Original Version, by changing formats or by porting the Font Software to a new environment.

"Author" refers to any designer, engineer, programmer, technical writer or other person who contributed to the Font Software.

#### PERMISSION & CONDITIONS

Permission is hereby granted, free of charge, to any person obtaining a copy of the Font Software, to use, study, copy, merge, embed, modify, redistribute, and sell modified and unmodified copies of the Font Software, subject to the following conditions:

- 1) Neither the Font Software nor any of its individual components, in Original or Modified Versions, may be sold by itself.
- 2) Original or Modified Versions of the Font Software may be bundled, redistributed and/or sold with any software, provided that each copy contains the above copyright notice and this license. These can be included either as stand-alone text files, human-readable headers or in the appropriate machine-readable metadata fields within text or binary files as long as those fields can be easily viewed by the user.
- 3) No Modified Version of the Font Software may use the Reserved Font Name(s) unless explicit written permission is granted by the corresponding Copyright Holder. This restriction only applies to the primary font name as presented to the users.
- 4) The name(s) of the Copyright Holder(s) or the Author(s) of the Font Software shall not be used to promote, endorse or advertise any Modified Version, except to acknowledge the contribution(s) of the Copyright Holder(s) and the Author(s) or with their explicit written permission.
- 5) The Font Software, modified or unmodified, in part or in whole, must be distributed entirely under this license, and must not be distributed under any other license. The requirement for fonts to remain under this license does not apply to any document created using the Font Software.

### **TERMINATION**

This license becomes null and void if any of the above conditions are not met.

### DISCLAIMER

THE FONT SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF COPYRIGHT, PATENT, TRADEMARK, OR OTHER RIGHT. IN NO EVENT SHALL THE COPYRIGHT HOLDER BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, INCLUDING ANY GENERAL, SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF THE USE OR INABILITY TO USE THE FONT SOFTWARE OR FROM OTHER DEALINGS IN THE FONT SOFTWARE.

\_\_\_\_\_

#### END OF octicons-font NOTICES AND INFORMATION

#### %% seti-ui NOTICES AND INFORMATION BEGIN HERE

Copyright (c) 2014 Jesse Weed

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

END OF seti-ui NOTICES AND INFORMATION

%% shaders-tmLanguage NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

MIT License

Copyright (c) 2017 Tim Jones

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER

LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF shaders-tmLanguage NOTICES AND INFORMATION

%% string scorer NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

This software is released under the MIT license:

Copyright (c) Joshaven Potter

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF string\_scorer NOTICES AND INFORMATION

%% sublimehq/Packages NOTICES AND INFORMATION BEGIN HERE

Copyright (c) Sublime Packages project authors

If not otherwise specified (see below), files in this folder fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF sublimehq/Packages NOTICES AND INFORMATION



\_\_\_\_\_

The MIT License (MIT)

Copyright (c) 2011 Guillermo Lpez-Anglada

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF SublimeText/PowerShell NOTICES AND INFORMATION

%% textmate/asp.vb.net.tmbundle NOTICES AND INFORMATION BEGIN HERE

Copyright (c) textmate-asp.vb.net.tmbundle project authors

If not otherwise specified (see below), files in this folder fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/asp.vb.net.tmbundle NOTICES AND INFORMATION

%% textmate/c.tmbundle NOTICES AND INFORMATION BEGIN HERE

Copyright (c) textmate-c.tmbundle authors

If not otherwise specified (see below), files in this repository fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/c.tmbundle NOTICES AND INFORMATION

%% textmate/diff.tmbundle NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

Copyright (c) textmate-diff.tmbundle project authors

If not otherwise specified (see below), files in this repository fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/diff.tmbundle NOTICES AND INFORMATION

%% textmate/git.tmbundle NOTICES AND INFORMATION BEGIN HERE

The MIT License (MIT)

Copyright (c) 2008 Tim Harper

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the" Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,

EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF textmate/git.tmbundle NOTICES AND INFORMATION

%% textmate/groovy.tmbundle NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

Copyright (c) textmate-groovy.tmbundle project authors

If not otherwise specified (see below), files in this repository fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/groovy.tmbundle NOTICES AND INFORMATION

%% textmate/html.tmbundle NOTICES AND INFORMATION BEGIN HERE

Copyright (c) textmate-html.tmbundle project authors

If not otherwise specified (see below), files in this repository fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/html.tmbundle NOTICES AND INFORMATION

%% textmate/ini.tmbundle NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

Copyright (c) textmate-ini.tmbundle project authors

If not otherwise specified (see below), files in this folder fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/ini.tmbundle NOTICES AND INFORMATION

%% textmate/javascript.tmbundle NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

Copyright (c) textmate-javascript.tmbundle project authors

If not otherwise specified (see below), files in this repository fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/javascript.tmbundle NOTICES AND INFORMATION

%% textmate/lua.tmbundle NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

Copyright (c) textmate-lua.tmbundle project authors

If not otherwise specified (see below), files in this repository fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

#### END OF textmate/lua.tmbundle NOTICES AND INFORMATION

#### %% textmate/make.tmbundle NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

Copyright (c) textmate-make.tmbundle project authors

If not otherwise specified (see below), files in this repository fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/make.tmbundle NOTICES AND INFORMATION

#### %% textmate/markdown.tmbundle NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_\_

Copyright (c) markdown.tmbundle authors

If not otherwise specified (see below), files in this repository fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

END OF textmate/markdown.tmbundle NOTICES AND INFORMATION

%% textmate/perl.tmbundle NOTICES AND INFORMATION BEGIN HERE

Copyright (c) textmate-perl.tmbundle project authors

If not otherwise specified (see below), files in this repository fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its

suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/perl.tmbundle NOTICES AND INFORMATION

%% textmate/r.tmbundle NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

Copyright (c) textmate-r.tmbundle project authors

If not otherwise specified (see below), files in this folder fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

\_\_\_\_\_

END OF textmate/r.tmbundle NOTICES AND INFORMATION

%% textmate/ruby.tmbundle NOTICES AND INFORMATION BEGIN HERE

Copyright (c) textmate-ruby.tmbundle project authors

If not otherwise specified (see below), files in this folder fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/ruby.tmbundle NOTICES AND INFORMATION

%% textmate/shellscript.tmbundle NOTICES AND INFORMATION BEGIN HERE

Copyright (c) textmate-shellscript.tmbundle project authors

If not otherwise specified (see below), files in this repository fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without

express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

\_\_\_\_\_

END OF textmate/shellscript.tmbundle NOTICES AND INFORMATION

%% textmate/sql.tmbundle NOTICES AND INFORMATION BEGIN HERE

\_\_\_\_\_

Copyright (c) textmate-sql.tmbundle project authors

If not otherwise specified (see below), files in this folder fall under the following license:

Permission to copy, use, modify, sell and distribute this software is granted. This software is provided "as is" without express or implied warranty, and with no claim as to its suitability for any purpose.

An exception is made for files in readable text which contain their own license information, or files where an accompanying file exists (in the same directory) with a "-license" suffix added to the base-name name of the original file, and an extension of txt, html, or similar. For example "tidy" is accompanied by "tidy-license.txt".

END OF textmate/sql.tmbundle NOTICES AND INFORMATION

%% textmate/yaml.tmbundle NOTICES AND INFORMATION BEGIN HERE

Copyright (c) 2015 FichteFoll < fichtefoll2@googlemail.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE

\_\_\_\_\_

END OF textmate/yaml.tmbundle NOTICES AND INFORMATION

%% TypeScript-TmLanguage NOTICES AND INFORMATION BEGIN HERE

Copyright (c) Microsoft Corporation. All rights reserved.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE. REPRODUCTION. AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object

form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.

- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

# 

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_

END OF vscode-swift NOTICES AND INFORMATION Microsoft Public License (Ms-PL)

This license governs use of the accompanying software. If you use the software, you accept this license. If you do not accept the license, do not use the software.

#### 1. Definitions

The terms "reproduce," "reproduction," "derivative works," and "distribution" have the same meaning here as under U.S. copyright law.

A "contribution" is the original software, or any additions or changes to the software.

A "contributor" is any person that distributes its contribution under this license.

"Licensed patents" are a contributor's patent claims that read directly on its contribution.

## 2. Grant of Rights

- (A) Copyright Grant- Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free copyright license to reproduce its contribution, prepare derivative works of its contribution, and distribute its contribution or any derivative works that you create.
- (B) Patent Grant- Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free license under its licensed patents to make, have made, use, sell, offer for sale, import, and/or otherwise dispose of its contribution in the software or derivative works of the contribution in the software.

#### 3. Conditions and Limitations

- (A) No Trademark License- This license does not grant you rights to use any contributors' name, logo, or trademarks.
- (B) If you bring a patent claim against any contributor over patents that you claim are infringed by the software, your patent license from such contributor to the software ends automatically.
- (C) If you distribute any portion of the software, you must retain all copyright, patent, trademark, and attribution notices that are present in the software.
- (D) If you distribute any portion of the software in source code form, you may do so only under this license by including a complete copy of this license with your distribution. If you distribute any portion of the software in compiled or object code form, you may only do so under a license that complies with this license.
- (E) The software is licensed "as-is." You bear the risk of using it. The contributors give no express warranties, guarantees or conditions. You may have additional consumer rights under your local laws which this license cannot change. To the extent permitted under your local laws, the contributors exclude the implied warranties of merchantability, fitness for a particular purpose and non-infringement.

  Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

#### MICROSOFT SOFTWARE LICENSE TERMS

MICROSOFT VISUAL STUDIO ENTERPRISE 2017, VISUAL STUDIO PROFESSIONAL 2017, VISUAL STUDIO TEST PROFESSIONAL 2017 AND TRIAL EDITION

These license terms are an agreement between you and Microsoft Corporation (or based on where you live, one of its affiliates). They apply to the software named above. The terms also apply to any Microsoft services and updates for the software, except to the extent those have different terms.

BY USING THE SOFTWARE, YOU ACCEPT THESE TERMS. IF YOU DO NOT ACCEPT THEM, DO NOT USE THE SOFTWARE. INSTEAD, RETURN IT TO THE RETAILER FOR A REFUND OR CREDIT. If you cannot obtain a refund there, contact Microsoft about Microsoft's refund policies. See www.microsoft.com/worldwide. In the United States and Canada, call (800) MICROSOFT or see www.microsoft.com/info/nareturns.htm.

TRIAL EDITION USE RIGHTS. If the software is a trial edition, this Section applies to your use of the trial edition.

- A. GENERAL. You may use any number of copies of the trial edition on your devices. You may only use the trial edition for internal evaluation purposes, and only during the trial period. You may not distribute or deploy any applications you make with the trial edition to a production environment. You may run load tests of up to 250 virtual users during the trial period.
- B. TRIAL PERIOD AND CONVERSION. The trial period lasts for 30 days after you install the trial edition, plus any permitted extension period. After the expiration of the trial period, the trial edition will stop running. You may extend the trial period an additional 90 days if you sign in to the software. You may not be able to access data used with the trial edition when it stops running. You may convert your trial rights at any time to the full-use rights described below by acquiring a valid full-use license.
- C. DISCLAIMER OF WARRANTY. THE TRIAL EDITION IS LICENSED "AS-IS." YOU BEAR THE RISK OF USING IT. MICROSOFT GIVES NO EXPRESS WARRANTIES, GUARANTEES OR CONDITIONS. TO THE EXTENT PERMITTED UNDER YOUR LOCAL LAWS, MICROSOFT EXCLUDES THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.

FOR AUSTRALIA – YOU HAVE STATUTORY GUARANTEES UNDER THE AUSTRALIAN CONSUMER LAW AND NOTHING IN THESE TERMS IS INTENDED TO AFFECT THOSE RIGHTS.

- D. SUPPORT. Because the trial edition is "as is," we may not provide support services for it.
- E. LIMITATIONS ON DAMAGES. YOU CAN RECOVER FROM MICROSOFT AND ITS SUPPLIERS ONLY DIRECT DAMAGES UP TO U.S. \$5.00. YOU CANNOT RECOVER ANY OTHER DAMAGES, INCLUDING CONSEQUENTIAL, LOST PROFITS, SPECIAL, INDIRECT OR INCIDENTAL DAMAGES.

This limitation applies to (a) anything related to the trial version, services, content (including code) on third party Internet sites, or third party programs; and (b) claims for breach of contract, breach of warranty, guarantee or condition, strict liability, negligence, or other tort to the extent permitted by applicable law.

It also applies even if Microsoft knew or should have known about the possibility of the damages. The above limitation or exclusion may not apply to you because your country may not allow the exclusion or limitation of incidental, consequential or other damages.

FULL-USE LICENSE TERMS FOR THE SOFTWARE: When you acquire a valid license and either enter a product key or sign in to the software, the terms below apply. You may not share your product key or access credentials.

- 1. OVERVIEW.
- a. Software. The software includes development tools, applications and documentation.
- b. License Model. The software is licensed on a per user basis.
- 2. USE RIGHTS.
- a. General. One user may use copies of the software on your devices to develop and test applications. This includes using copies of the software on your own internal servers that remain fully dedicated to your own use. You may not, however, separate the components of the software and run those in a production environment, or on third party devices (except as otherwise stated in this agreement), or for any purpose other than developing and testing your applications. Running the software on Microsoft Azure requires a separate license.
- b. Workloads. These license terms apply to your use of the Workloads made available to you within the software, except to the extent a Workload or a Workload component comes with different terms.
- c. Demo Use. The use permitted above includes use of the software in demonstrating your applications.
- d. Backup copy. You may make one backup copy of the software, for reinstalling the software.
- 3. TERMS FOR SPECIFIC COMPONENTS.
- a. Utilities. The software contains items on the Utilities List at https://go.microsoft.com/fwlink/?linkid=823097. You

may copy and install those items, if included with the software, onto your devices to debug and deploy your applications and databases you developed with the software. Please note that Utilities are designed for temporary use, that Microsoft may not be able to patch or update Utilities separately from the rest of the software, and that some Utilities by their nature may make it possible for others to access the devices on which they are installed. As a result, you should delete all Utilities you have installed after you finish debugging or deploying your applications and databases. Microsoft is not responsible for any third party use or access of Utilities you install on any device. b. Build Tools. You may copy and install files from the software onto your build devices, including physical devices and virtual machines or containers on those machines, whether on-premises or remote machines that are owned by you, hosted on Azure for you, or dedicated solely to your use (collectively, "Build Devices"). You and others in your organization may use these files on your Build Devices solely to compile, build, and verify applications or run quality or performance tests of those applications as part of the build process. For clarity, "applications" means applications developed by you and others in your organization who are each licensed to use the software. c. Font Components. While the software is running, you may use its fonts to display and print content. You may

- c. Font Components. While the software is running, you may use its fonts to display and print content. You may only: (i) embed fonts in content as permitted by the embedding restrictions in the fonts; and (ii) temporarily download them to a printer or other output device to help print content.
- d. Licenses for Other Components.
- Microsoft Platforms. The software may include components from Microsoft Windows; Microsoft Windows Server; Microsoft SQL Server; Microsoft Exchange; Microsoft Office; and Microsoft SharePoint. These components are governed by separate agreements and their own product support policies, as described in the Microsoft "Licenses" folder accompanying the software, except that, if separate license terms for those components are included in the associated installation directly, those license terms control.
- Developer resources. The software includes compilers, languages, runtimes, environments, and other resources. These components may be governed by separate agreements and have their own product support policies. A list of these other components is located at https://support.microsoft.com.

Third Party Components. The software may include third party components with separate legal notices or governed by other agreements, as may be described in the ThirdPartyNotices file(s) accompanying the software.

- e. PACKAGE MANAGERS. The software includes package managers, like NuGet, that give you the option to download other Microsoft and third party software packages to use with your application. Those packages are under their own licenses, and not this agreement. Microsoft does not distribute, license or provide any warranties for any of the third party packages.
- 4. DISTRIBUTABLE CODE. The software contains code that you are permitted to distribute in applications you develop as described in this Section. (For this Section the term "distribution" also means deployment of your applications for third parties to access over the Internet.)
- a. Right to Use and Distribute. The code and text files listed below are "Distributable Code."
- REDIST.TXT Files. You may copy and distribute the object code form of code listed on the REDIST list located at https://go.microsoft.com/fwlink/?linkid=823097.
- Sample Code, Templates and Styles. You may copy, modify and distribute the source and object code form of code marked as "sample", "template", "simple styles" and "sketch styles".
- Image Library. You may copy and distribute images, graphics and animations in the Image Library as described in the software documentation.
- Third Party Distribution. You may permit distributors of your applications to copy and distribute the Distributable Code as part of those applications.
- b. Distribution Requirements. For any Distributable Code you distribute, you must:
- add significant primary functionality to it in your applications;
- require distributors and external end users to agree to terms that protect the Distributable Code at least as much as this agreement; and
- indemnify, defend, and hold harmless Microsoft from any claims, including attorneys' fees, related to the

distribution or use of your applications, except to the extent that any claim is based solely on the Distributable Code.

- c. Distribution Restrictions. You may not:
- use Microsoft's trademarks in your applications' names or in a way that suggests your applications come from or are endorsed by Microsoft; or
- modify or distribute the source code of any Distributable Code so that any part of it becomes subject to an Excluded License. An Excluded License is one that requires, as a condition of use, modification or distribution of code, that (i) it be disclosed or distributed in source code form; or (ii) others have the right to modify it.
- 5. DATA.
- a. Data Collection. The software may collect information about you and your use of the software, and send that to Microsoft. Microsoft may use this information to provide services and improve our products and services. You may opt-out of many of these scenarios, but not all, as described in the product documentation. There are also some features in the software that may enable you and Microsoft to collect data from users of your applications. If you use these features, you must comply with applicable law, including providing appropriate notices to users of your applications together with Microsoft's privacy statement. Our privacy statement is located at https://go.microsoft.com/fwlink/?LinkID=824704. You can learn more about data collection and use in the help documentation and our privacy statement. Your use of the software operates as your consent to these practices. b. Processing of Personal Data. To the extent Microsoft is a processor or subprocessor of personal data in connection with the software, Microsoft makes the commitments in the European Union General Data Protection Regulation Terms of the Online Services Terms to all customers effective May 25, 2018, at http://go.microsoft.com/?linkid=9840733.
- 6. SCOPE OF LICENSE. The software is licensed, not sold. This agreement only gives you some rights to use the software. Microsoft reserves all other rights. Unless applicable law gives you more rights despite this limitation, you may use the software only as expressly permitted in this agreement. In doing so, you must comply with any technical limitations in the software that only allow you to use it in certain ways. You may not
- work around any technical limitations in the software;
- reverse engineer, decompile or disassemble the software, or otherwise attempt to derive the source code for the software, except and to the extent required by third party licensing terms governing use of certain open source components that may be included in the software;
- remove, minimize, block or modify any notices of Microsoft or its suppliers in the software;
- use the software in any way that is against the law;
- share, publish, rent or lease the software, or provide the software as a stand-alone offering for others to use.
- 7. DOCUMENTATION. Any person that has valid access to your computer or internal network may copy and use the documentation for your internal, reference purposes.
- 8. NOT FOR RESALE SOFTWARE. You may not sell software marked as "NFR" or "Not for Resale."
- 9. RIGHTS TO USE OTHER VERSIONS AND LOWER EDITIONS. You may use the software and any prior version on any device. You may create, store, install, run, or access in place of the version licensed, a copy or instance of a prior version, different permitted language version, or lower edition.
- 10. PROOF OF LICENSE. If you acquired the software on a disc or other media, your proof of license is the Microsoft certificate of authenticity label, the accompanying product key, and your receipt. If you purchased an online copy of the software, your proof of license is the Microsoft product key you received with your purchase and your receipt and/or being able to access the software service through your Microsoft account. To identify genuine Microsoft software, see www.howtotell.com.
- 11. TRANSFER TO A THIRD PARTY. If you are a valid licensee of the software, you may transfer it and this agreement directly to another party. Before the transfer, that party must agree that this agreement applies to the transfer and use of the software. The transfer must include the software, genuine Microsoft product key, and (if applicable) the Proof of License label. The transferor must uninstall all copies of the software after transferring it from the device. The transferor may not retain any copies of the genuine Microsoft product key to be transferred, and may only retain copies of the software if otherwise licensed to do so. If you have acquired a non-perpetual

license to use the software or if the software is marked Not for Resale you may not transfer the software or the software license agreement to another party.

- 12. EXPORT RESTRICTIONS. You must comply with all domestic and international export laws and regulations that apply to the software, which include restrictions on destinations, end users, and end use. For further information on export restrictions, visit www.microsoft.com/exporting.
- 13. SUPPORT. Microsoft provides support for the software as described at https://support.microsoft.com.
- 14. ENTIRE AGREEMENT. This agreement (including the warranty below), and the terms for supplements, updates, Internet-based services and support services, are the entire agreement for the software and support services.
- 15. APPLICABLE LAW. If you acquired the software in the United States, Washington State law applies to interpretation of and claims for breach of this agreement, and the laws of the state where you live apply to all other claims. If you acquire the software in any other country, its laws apply.
- 16. CONSUMER RIGHTS; REGIONAL VARIATIONS. This agreement describes certain legal rights. You may have other rights, including consumer rights, under the laws of your state or country. Separate and apart from your relationship with Microsoft, you may also have rights with respect to the party from which you acquired the software. This agreement does not change those other rights if the laws of your state or country do not permit it to do so. For example, if you acquired the software in one of the below regions, or if mandatory country law applies, then the following provisions apply to you:
- a) Australia. References to "Limited Warranty" mean the express warranty provided by Microsoft or the manufacturer or installer. This warranty is in addition to other rights and remedies you may have under law, including your rights and remedies under the statutory guarantees in the Australian Consumer Law. In this section, "goods" refers to the software for which Microsoft or the manufacturer or installer provides the express warranty. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
- b) Canada. If you acquired this software in Canada, you may stop receiving updates by turning off the automatic update feature, disconnecting your device from the Internet (if and when you re-connect to the Internet, however, the software will resume checking for and installing updates), or uninstalling the software. The product documentation, if any, may also specify how to turn off updates for your specific device or software.
- c) Germany and Austria.
- (i) Warranty. The properly licensed software will perform substantially as described in any Microsoft materials that accompany it. However, Microsoft gives no contractual guarantee in relation to the software.
- (ii) Limitation of Liability. In case of intentional conduct, gross negligence, claims based on the Product Liability Act, and death or personal or physical injury, Microsoft is liable according to the statutory law.
- Subject to the foregoing clause (ii), Microsoft will only be liable for slight negligence if Microsoft is in breach of such material contractual obligations, the fulfillment of which facilitate the due performance of this agreement, the breach of which would endanger the purpose of this agreement and the compliance with which a party may constantly trust in (so-called "cardinal obligations"). In other cases of slight negligence, Microsoft will not be liable for slight negligence.
- 17. LIMITATION ON AND EXCLUSION OF DAMAGES. YOU CAN RECOVER FROM MICROSOFT AND ITS SUPPLIERS ONLY DIRECT DAMAGES UP TO THE AMOUNT YOU PAID FOR THE SOFTWARE. YOU CANNOT RECOVER ANY OTHER DAMAGES, INCLUDING CONSEQUENTIAL, LOST PROFITS, SPECIAL, INDIRECT OR INCIDENTAL DAMAGES.

This limitation applies to (a) anything related to the software, services, content (including code) on third party Internet sites, or third party applications; and (b) claims for breach of contract, breach of warranty, guarantee or condition, strict liability, negligence, or other tort to the extent permitted by applicable law.

It also applies even if Microsoft knew or should have known about the possibility of the damages. The above limitation or exclusion may not apply to you because your state or country may not allow the exclusion or limitation

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#### LIMITED WARRANTY

recipient.

A. LIMITED WARRANTY. If you follow the instructions, the software will perform substantially as described in the Microsoft materials that you receive in or with the software.

References to "limited warranty" are references to the express warranty provided by Microsoft. This warranty is given in addition to other rights and remedies you may have under law, including your rights and remedies in accordance with the statutory guarantees under local Consumer Law.

B. TERM OF WARRANTY; WARRANTY RECIPIENT; LENGTH OF ANY IMPLIED WARRANTIES. THE LIMITED WARRANTY COVERS THE SOFTWARE FOR ONE YEAR AFTER ACQUIRED BY THE FIRST USER. IF YOU RECEIVE SUPPLEMENTS, UPDATES, OR REPLACEMENT SOFTWARE DURING THAT YEAR, THEY WILL BE COVERED FOR THE REMAINDER OF THE WARRANTY OR 30 DAYS, WHICHEVER IS LONGER. If the first user transfers the software, the remainder of the warranty will apply to the

TO THE EXTENT PERMITTED BY LAW, ANY IMPLIED WARRANTIES, GUARANTEES OR CONDITIONS LAST ONLY DURING THE TERM OF THE LIMITED WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so these limitations may not apply to you. They also might not apply to you because some countries may not allow limitations on how long an implied warranty, guarantee or condition lasts. C. EXCLUSIONS FROM WARRANTY. This warranty does not cover problems caused by your acts (or failures to act), the acts of others, or events beyond Microsoft's reasonable control.

D. REMEDY FOR BREACH OF WARRANTY. MICROSOFT WILL REPAIR OR REPLACE THE SOFTWARE AT NO CHARGE. IF MICROSOFT CANNOT REPAIR OR REPLACE IT, MICROSOFT WILL REFUND THE AMOUNT SHOWN ON YOUR RECEIPT FOR THE SOFTWARE. IT WILL ALSO REPAIR OR REPLACE SUPPLEMENTS, UPDATES AND REPLACEMENT SOFTWARE AT NO CHARGE. IF MICROSOFT CANNOT REPAIR OR REPLACE THEM, IT WILL REFUND THE AMOUNT YOU PAID FOR THEM, IF ANY. YOU MUST UNINSTALL THE SOFTWARE AND RETURN ANY MEDIA AND OTHER ASSOCIATED MATERIALS TO MICROSOFT WITH PROOF OF PURCHASE TO OBTAIN A REFUND. THESE ARE YOUR ONLY REMEDIES FOR BREACH OF THE LIMITED WARRANTY.

E. CONSUMER RIGHTS NOT AFFECTED. YOU MAY HAVE ADDITIONAL CONSUMER RIGHTS UNDER YOUR LOCAL LAWS, WHICH THIS AGREEMENT CANNOT CHANGE.

- F. WARRANTY PROCEDURES. You need proof of purchase for warranty service.
- 1. United States and Canada. For warranty service or information about how to obtain a refund for software acquired in the United States and Canada, contact Microsoft at:
- (800) MICROSOFT;
- Microsoft Customer Service and Support, One Microsoft Way, Redmond, WA 98052-6399; or
- visit (aka.ms/nareturns).
- 2. Europe, Middle East, and Africa. If you acquired the software in Europe, the Middle East, or Africa, Microsoft Ireland Operations Limited makes this limited warranty. To make a claim under this warranty, you should contact either:
- Microsoft Ireland Operations Limited, Customer Care Centre, Atrium Building Block B, Carmanhall Road, Sandyford Industrial Estate, Dublin 18, Ireland; or
- the Microsoft affiliate serving your country (see aka.ms/msoffices).
- 3. Australia. For Warranty Services and to claim expenses in relation to the warranty (if applicable) for software acquired in Australia, contact Microsoft at:
- 13 20 58; or
- Microsoft Pty Ltd, 1 Epping Road, North Ryde NSW 2113, Australia.
- 4. Outside the United States, Canada, Europe, Middle East, Africa, and Australia. If you acquired the software

outside the United States, Canada, Europe, the Middle East, Africa, and Australia, contact the Microsoft affiliate serving your country (see aka.ms/msoffices).

G. NO OTHER WARRANTIES. THE LIMITED WARRANTY IS THE ONLY DIRECT WARRANTY FROM MICROSOFT. MICROSOFT GIVES NO OTHER EXPRESS WARRANTIES, GUARANTEES OR CONDITIONS. WHERE ALLOWED BY YOUR LOCAL LAWS, MICROSOFT EXCLUDES IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. If your local laws give you any implied warranties, guarantees or conditions, despite this exclusion, your remedies are described in the Remedy for Breach of Warranty clause above, to the extent permitted by your local laws.

FOR AUSTRALIA ONLY. References to "Limited Warranty" are references to the warranty provided by Microsoft. This warranty is given in addition to other rights and remedies you may have under law, including your rights and remedies in accordance with the statutory guarantees under the Australian Consumer Law. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. Goods presented for repair may be replaced by refurbished goods of the same type rather than being replaced. Refurbished parts may be used to repair the goods.

H. LIMITATION ON AND EXCLUSION OF DAMAGES FOR BREACH OF WARRANTY. THE LIMITATION ON AND EXCLUSION OF DAMAGES CLAUSE ABOVE APPLIES TO BREACHES OF THIS LIMITED WARRANTY.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE. YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM COUNTRY TO COUNTRY.

EULA ID: VS2017\_ENT\_PRO\_TRIAL\_RTW.2\_ENU

# 1.57 py3-pip 22.1.1-r0

# 1.57.1 Available under license:

Copyright (c) 2007 Ian Bicking and Contributors Copyright (c) 2009 Ian Bicking, The Open Planning Project Copyright (c) 2011-2013 The virtualenv developers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF

MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. The MIT License (MIT)

Copyright (c) 2017 Thomas Kluyver

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (C) 2016 Jason R Coombs < jaraco@jaraco.com>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# This is the MIT license

Copyright (c) 2010 ActiveState Software Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2010-2020 Benjamin Peterson

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all

copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis

or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

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

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

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

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

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

# GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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

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

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

"Source code" for a work means the preferred form of the work for

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

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

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

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

- 2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) The modified work must itself be a software library.
  - b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
  - c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
  - d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the

application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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

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

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

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

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

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

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

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

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

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

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

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

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work

during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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

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

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
  - b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.
- 11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or

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

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

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

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

- 12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

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

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

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

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

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

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

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

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it!

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or,

within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all

other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

# END OF TERMS AND CONDITIONS

Copyright (c) 2010 Jonathan Hartley All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holders, nor those of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. MIT License

Copyright (c) 2021 Taneli Hukkinen

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal

in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2018, Tzu-ping Chung <uranusjr@gmail.com>

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made under the terms of \*both\* these licenses.

Pylons Project Contributor Agreement

\_\_\_\_\_

The submitter agrees by adding his or her name within the section below named "Contributors" and submitting the resulting modified document to the canonical shared repository location for this software project (whether directly, as a user with "direct commit access", or via a "pull request"), he or she is signing a contract electronically. The submitter becomes a Contributor after a) he or she signs this document by adding their name beneath the "Contributors" section below, and b) the resulting document is accepted into the canonical version control repository.

Treatment of Account

Contributor will not allow anyone other than the Contributor to use his or her username or source repository login to submit code to a Pylons Project source repository. Should Contributor become aware of any such use, Contributor will immediately by notifying Agendaless Consulting. Notification must be performed by sending an email to webmaster@agendaless.com. Until such notice is received, Contributor will be presumed to have taken all actions made through Contributor's account. If the Contributor has direct commit access, Agendaless Consulting will have complete control and discretion over capabilities assigned to Contributor's account, and may disable Contributor's account for any reason at any time.

## Legal Effect of Contribution

-----

Upon submitting a change or new work to a Pylons Project source Repository (a "Contribution"), you agree to assign, and hereby do assign, a one-half interest of all right, title and interest in and to copyright and other intellectual property rights with respect to your new and original portions of the Contribution to Agendaless Consulting. You and Agendaless Consulting each agree that the other shall be free to exercise any and all exclusive rights in and to the Contribution, without accounting to one another, including without limitation, the right to license the Contribution to others under the Repoze Public License. This agreement shall run with title to the Contribution. Agendaless Consulting does not convey to you any right, title or interest in or to the Program or such portions of the Contribution that were taken from the Program. Your transmission of a submission to the Pylons Project source Repository and marks of identification concerning the Contribution itself constitute your intent to contribute and your assignment of the work in accordance with the provisions of this Agreement.

License Terms

-----

Code committed to the Pylons Project source repository (Committed Code) must be governed by the Repoze Public License (http://repoze.org/LICENSE.txt, aka "the RPL") or another license acceptable to Agendaless Consulting. Until Agendaless Consulting declares in writing an acceptable license other than the RPL, only the RPL shall be used. A list of exceptions is detailed within the "Licensing Exceptions" section of this document, if one exists.

Representations, Warranty, and Indemnification

-----

Contributor represents and warrants that the Committed Code does not violate the rights of any person or entity, and that the Contributor has legal authority to enter into this Agreement and legal authority over Contributed Code. Further, Contributor indemnifies Agendaless Consulting against violations.

Cryptography

-----

Contributor understands that cryptographic code may be subject to government regulations with which Agendaless Consulting and/or entities using Committed Code must comply. Any code which contains any of the items listed below must not be checked-in until Agendaless Consulting staff has been notified and has approved such contribution in writing.

- Cryptographic capabilities or features
- Calls to cryptographic features
- User interface elements which provide context relating to cryptography
- Code which may, under casual inspection, appear to be cryptographic.

Notices

-----

Contributor confirms that any notices required will be included in any Committed Code.

Licensing Exceptions

\_\_\_\_\_

None.

List of Contributors

\_\_\_\_\_

The below-signed are contributors to a code repository that is part of the project named "Translationstring". Each below-signed contributor has read, understands and agrees to the terms above in the section within this document entitled "Pylons Project Contributor Agreement" as of the date beside his or her name.

Contributors

-----

- Chris McDonough, 2011/02/16
- Wichert Akkerman, 2012/02/02

Copyright (c) 2012 by Simon Sapin.

Some rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* The names of the contributors may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python

releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Deriv	ed Ye	ear Ow	ner GPL-
	from		coı	npatible? (1)
0.9.0 thru	1.2	1991	-1995 CV	VI yes
1.3 thru 1	.5.2 1.2	199	5-1999 C	NRI yes
1.6	1.5.2	2000	CNRI	no
2.0	1.6	2000	BeOper	.com no
1.6.1	1.6	2001	CNRI	yes (2)
2.1	2.0+1.6	5.1 2001	PSF	no
2.0.1	2.0+1.	6.1 200	1 PSF	yes
2.1.1	2.1+2.0	0.1 200	1 PSF	yes
2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-2	2003 PSF	yes
2.3.1	2.3	2002-2	2003 PSF	yes
2.3.2	2.3.1	2002-	2003 PSF	yes
2.3.3	2.3.2	2002-	2003 PSF	yes
2.3.4	2.3.3	2004	PSF	yes
2.3.5	2.3.4	2005	PSF	yes
2.4	2.3	2004	PSF	yes
2.4.1	2.4	2005	PSF	yes
2.4.2	2.4.1	2005	PSF	yes
2.4.3	2.4.2	2006	PSF	yes
2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
2.7	2.6	2010	PSF	yes

# Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

(2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

Β.	TERMS	AND	COND	ITIONS	FOR A	ACCESS	SING OR	OTHER	WISE	USING	PYTH	ON
												_

#### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON,

#### OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

# BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

## BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material

breach of its terms and conditions.

- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.
- 7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

#### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of

the changes made to Python 1.6.1.

- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

**ACCEPT** 

# CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its

documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. Apache License

Version 2.0, January 2004 http://www.apache.org/licenses/

# TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You

institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov 3 19:04:19 2011#

This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt). This file can be found in the mozilla source tree:
http://mxr.mozilla.org/mozilla/source/security/nss/lib/ckfw/builtins/certdata.txt?raw=1#
It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php\_curl, or with
an Apache+mod\_ssl webserver for SSL client authentication.

Just configure this file as the SSLCACertificateFile.#

```
***** BEGIN LICENSE BLOCK *****
```

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at http://mozilla.org/MPL/2.0/.

```
***** END LICENSE BLOCK *****
```

@(#) \$RCSfile: certdata.txt,v \$ \$Revision: 1.80 \$ \$Date: 2011/11/03 15:11:58 \$ Copyright (C) 2008-2011 INADA Naoki <songofacandy@gmail.com>

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# A. HISTORY OF THE SOFTWARE

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Deriv	ed Y	ear	Owne	r GPL-
from				comp	atible? (1)
0.9.0 thru	1.2	199	1-1995	CWI	yes
1.3 thru 1	.5.2 1.2	19	95-1999	CNF	RI yes
1.6	1.5.2	2000	CN	RI	no
2.0	1.6	2000	BeC	pen.co	om no
1.6.1	1.6	2001	CN	RI	yes (2)
2.1	2.0+1.6.	1 200	)1 P	SF	no
2.0.1	2.0+1.6	5.1 20	01 I	PSF	yes
2.1.1	2.1+2.0	.1 20	01 I	PSF	yes

2.2	2.1.1	2001	PSF	yes
2.1.2	2.1.1	2002	PSF	yes
2.1.3	2.1.2	2002	PSF	yes
2.2.1	2.2	2002	PSF	yes
2.2.2	2.2.1	2002	PSF	yes
2.2.3	2.2.2	2003	PSF	yes
2.3	2.2.2	2002-20	003 PSF	yes
2.3.1	2.3	2002-20	003 PSF	yes
2.3.2	2.3.1	2002-2	003 PSI	yes yes
2.3.3	2.3.2	2002-2	003 PSI	yes yes
2.3.4	2.3.3	2004	PSF	yes
2.3.5	2.3.4	2005	PSF	yes
2.4	2.3	2004	PSF	yes
2.4.1	2.4	2005	PSF	yes
2.4.2	2.4.1	2005	PSF	yes
2.4.3	2.4.2	2006	PSF	yes
2.4.4	2.4.3	2006	PSF	yes
2.5	2.4	2006	PSF	yes
2.5.1	2.5	2007	PSF	yes
2.5.2	2.5.1	2008	PSF	yes
2.5.3	2.5.2	2008	PSF	yes
2.6	2.5	2008	PSF	yes
2.6.1	2.6	2008	PSF	yes
2.6.2	2.6.1	2009	PSF	yes
2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
3.0	2.6	2008	PSF	yes
3.0.1	3.0	2009	PSF	yes
3.1	3.0.1	2009	PSF	yes
3.1.1	3.1	2009	PSF	yes
3.1.2	3.1	2010	PSF	yes
3.2	3.1	2010	PSF	yes

# Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's

# B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

# PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

-----

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote

products or services of Licensee, or any third party.

8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

# BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

\_\_\_\_\_

#### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any

third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

#### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

ACCEPT

CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO

THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

=========

#### Contributors

\_\_\_\_\_

- \* Alex Grnholm
- \* Alice Bevan-McGregor
- \* Arfrever Frehtes Taifersar Arahesis
- \* Christophe Combelles
- \* Daniel Stutzbach
- \* Daniel Holth
- \* Hanno Schlichting
- \* Jannis Leidel
- \* Jason R. Coombs
- \* Jim Fulton
- \* Jonathan Lange
- \* Justin Azoff
- \* Lennart Regebro
- \* Marc Abramowitz
- \* Martin von Lwis
- \* Noufal Ibrahim
- \* Pete Hollobon
- \* Philip Jenvey
- \* Reinout van Rees
- \* Robert Myers
- \* Stefan H. Holek
- \* Tarek Ziad
- \* Toshio Kuratomi

If you think you name is missing, please add it (alpha order by first name)
A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Deriv	ed Ye	ar Ov	vner	GPL-
	from		co	mpatibl	e? (1)
0.9.0 thru	1.2	1991-	1995 C	WI	yes
1.3 thru 1	.5.2 1.2	1995	5-1999 (	CNRI	yes
1.6	1.5.2	2000	CNRI	no	
2.0	1.6	2000	BeOpe	n.com 1	10
1.6.1	1.6	2001	CNRI	yes	(2)
2.1	2.0+1.6	5.1 2001	PSF	no	
2.0.1	2.0+1.6	6.1 2001	PSF	ye	es
2.1.1	2.1+2.	0.1 2001	l PSF	ye	es
2.1.2	2.1.1	2002	PSF	yes	
2.1.3	2.1.2	2002	PSF	yes	
2.2 and al	bove 2.1	.1 20	01-now	PSF	yes

# Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

# B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

#### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

-----

#### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.
- 7. By copying, installing or otherwise using the software, Licensee

agrees to be bound by the terms and conditions of this License Agreement.

#### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

**ACCEPT** 

# CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

\_\_\_\_\_

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT

OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

License

A copyright notice accompanies this license document that identifies the copyright holders.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- Redistributions in source code must retain the accompanying copyright notice, this list of conditions, and the following disclaimer.
- Redistributions in binary form must reproduce the accompanying copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Names of the copyright holders must not be used to endorse or promote products derived from this software without prior written permission from the copyright holders.
- 4. If any files are modified, you must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

# Disclaimer

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

**BSD 3-Clause License** 

Copyright (c) 2013-2021, Kim Davies All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. argparse is (c) 2006-2009 Steven J. Bethard <steven.bethard@gmail.com>.

The argparse module was contributed to Python as of Python 2.7 and thus was licensed under the Python license. Same license applies to all files in the argparse package project.

For details about the Python License, please see doc/Python-License.txt.

History

Before (and including) argparse 1.1, the argparse package was licensed under Apache License v2.0.

After argparse 1.1, all project files from the argparse project were deleted due to license compatibility issues between Apache License 2.0 and GNU GPL v2.

The project repository then had a clean start with some files taken from Python 2.7.1, so definitely all files are under Python License now. Copyright (c) 2006-2013 James Graham and other contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to

permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. Copyright (c) 2006-2021 by the respective authors (see AUTHORS file). All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

\_\_\_\_\_

Contributors

\_\_\_\_\_

- \* Alex Grnholm
- \* Alice Bevan-McGregor
- \* Arfrever Frehtes Taifersar Arahesis
- \* Christophe Combelles
- \* Daniel Stutzbach
- \* Daniel Holth

- \* Dirley Rodrigues
- \* Donald Stufft
- \* Grigory Petrov
- \* Hanno Schlichting
- \* Jannis Leidel
- \* Jason R. Coombs
- \* Jim Fulton
- \* Jonathan Lange
- \* Justin Azoff
- \* Lennart Regebro
- \* Marc Abramowitz
- \* Martin von Lwis
- \* Noufal Ibrahim
- \* Pete Hollobon
- \* Phillip J. Eby
- \* Philip Jenvey
- \* Philip Thiem
- \* Reinout van Rees
- \* Robert Myers
- \* Stefan H. Holek
- \* Tarek Ziad
- \* Toshio Kuratomi

If you think you name is missing, please add it (alpha order by first name) Copyright (c) 2011 Agendaless Consulting and Contributors. (http://www.agendaless.com), All Rights Reserved MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) Donald Stufft and individual contributors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2008-present The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

## 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of,

- publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution

notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing

the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Copyright (c) 2008-2013 The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

License for Bundle of CA Root Certificates (pip/cacert.pem)

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

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

## Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

## END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.58 cffi 1.15.1

## 1.58.1 Available under license:

Except when otherwise stated (look for LICENSE files in directories or information at the beginning of each file) all software and documentation is licensed as follows:

The MIT License

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.59 pynacl 1.5.0

## 1.59.1 Available under license:

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE. REPRODUCTION. AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions

of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

/\*

\* ISC License

\*

- \* Copyright (c) 2013-2021
- \* Frank Denis <j at pureftpd dot org>

\*

- \* Permission to use, copy, modify, and/or distribute this software for any
- \* purpose with or without fee is hereby granted, provided that the above
- \* copyright notice and this permission notice appear in all copies.

\*

- \* THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES
- \* WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF
- $\ast$  MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR
- \* ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
- \* WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
- \* ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF
- \* OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

\*/

## 1.60 urllib3 1.26.9

## 1.60.1 Available under license:

MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.61 py3-contextlib 21.6.0-r2

## 1.61.1 Available under license:

Note: The type hints included in this package come from the typeshed project, and are hence distributed under the Apache License 2.0 rather than under the Python Software License that covers the module implementation and test suite.

## A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

contextlib2 is a derivative of the contextlib module distributed by the PSF as part of the Python standard library. According, it is itself redistributed under the PSF license (reproduced in full below). As the contextlib module was added only in Python 2.5, the licenses for earlier Python versions are not applicable and have not been included.

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases that included the contextlib module.

Release	Deriv	ed Yea	ır Ov	Owner	
	from		co	mpatibl	e? (1)
2.5	2.4	2006	PSF	yes	
2.5.1	2.5	2007	PSF	•	
				yes	
2.5.2	2.5.1	2008	PSF	yes	
2.5.3	2.5.2	2008	PSF	yes	
2.6	2.5	2008	PSF	yes	
2.6.1	2.6	2008	PSF	yes	
2.6.2	2.6.1	2009	PSF	yes	
2.6.3	2.6.2	2009	PSF	yes	
2.6.4	2.6.3	2009	PSF	yes	
2.6.5	2.6.4	2010	PSF	yes	
3.0	2.6	2008	PSF	yes	
3.0.1	3.0	2009	PSF	yes	
3.1	3.0.1	2009	PSF	yes	
3.1.1	3.1	2009	PSF	yes	
3.1.2	3.1.1	2010	PSF	yes	
3.1.3	3.1.2	2010	PSF	yes	
3.1.4	3.1.3	2011	PSF	yes	
3.2	3.1	2011	PSF	yes	
3.2.1	3.2	2011	PSF	yes	
3.2.2	3.2.1	2011	PSF	yes	
3.3	3.2	2012	PSF	yes	

## Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHO
----------------------------------------------------------------

\_\_\_\_\_

## PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF. EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.

- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

# 1.62 pyparsing 2.4.7

## 1.62.1 Available under license:

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

GNU GENERAL PUBLIC LICENSE

Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <a href="http://fsf.org/">http://fsf.org/</a> Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to

share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

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

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

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

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

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

#### TERMS AND CONDITIONS

#### 0. Definitions.

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

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

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

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

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

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

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

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

#### 1. Source Code.

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

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

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

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

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

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

## 2. Basic Permissions.

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

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

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

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

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

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

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

## 4. Conveying Verbatim Copies.

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

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

## 5. Conveying Modified Source Versions.

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

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

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

## 6. Conveying Non-Source Forms.

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

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

- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

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

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status

of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

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

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

## 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by

this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material: or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the

additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a

party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

## 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

## 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY

APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

## 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

## 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

## END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or

(at your option) any later version.

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

You should have received a copy of the GNU General Public License along with this program. If not, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>>.

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

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

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

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <a href="http://www.gnu.org/philosophy/why-not-lgpl.html">http://www.gnu.org/philosophy/why-not-lgpl.html</a>.

#Copyright (C) 2006 Tim Cera timcera@earthlink.net

#

#

# This program is free software; you can redistribute it and/or modify it

# under the terms of the GNU General Public License as published by the Free

- # Software Foundation; either version 2 of the License, or (at your option)
- # any later version.

#

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

#

- # You should have received a copy of the GNU General Public License along
- # with this program; if not, write to the Free Software Foundation, Inc.,
- # 675 Mass Ave, Cambridge, MA 02139, USA.

.....

## 1.63 sqlite 3.38.5-r0

## 1.63.1 Available under license:

The author disclaims copyright to this source code. In place of a legal notice, here is a blessing:

May you do good and not evil.

May you find forgiveness for yourself and forgive others.

May you share freely, never taking more than you give.

The author disclaims copyright to this source code. In place of a legal notice, here is a blessing:

- \* May you do good and not evil.
- \* May you find forgiveness for yourself and forgive others.
- \* May you share freely, never taking more than you give.

# 1.64 retrying 1.3.3

## 1.64.1 Available under license:

Copyright 2013 Ray Holder

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and

- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or

agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License");

you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.65 python-setuptools 60.6.0

### 1.65.1 Available under license:

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made under the terms of \*both\* these licenses.

Copyright (c) Donald Stufft and individual contributors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Copyright (c) 2012 Erik Rose

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2018 Luminoso Technologies, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2017-2019 Brett Cannon, Barry Warsaw

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.66 mpdecimal 2.5.1-r1

## 1.66.1 Available under license:

### DOCUMENTATION LICENSE

\_\_\_\_\_

Copyright 2010-2020 Stefan Krah. All rights reserved.

Redistribution and use in source (RST) and 'compiled' forms (HTML, PDF, PostScript and so forth) with or without modification, are permitted provided that the following conditions are met:

- Redistributions of source code (RST) must retain the above copyright notice, this list of conditions and the following disclaimer as the first lines of this file unmodified.
- 2. Modified documents must carry a notice that modification has occurred. This notice must also be present in any compiled form.
- 3. Redistributions in compiled form (converted to HTML, PDF, PostScript and other formats) must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS DOCUMENTATION IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR

IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS DOCUMENTATION, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

### **DISTRIBUTOR NOTES**

\_\_\_\_\_

The license is the standard FreeBSD Documentation License with an added clause that requires a user notice for modifications. The following modification notices are sufficient:

RST files
----The modification notice may be added below the license:
Copyright 2010-2020 Stefan Krah. All rights reserved.

IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This file was modified in 2020 by DISTRIBUTOR.

HTML files

The modification notice may be added to the copyright footer:

Copyright 2010-2020 Stefan Krah, modified 2020 by DISTRIBUTOR.

/\*

\* Copyright (c) 2008-2020 Stefan Krah. All rights reserved.

\*

- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:

\*

- \* 1. Redistributions of source code must retain the above copyright
- \* notice, this list of conditions and the following disclaimer.

\*

- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.

\*

- \* THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND
- \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- \* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
- \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- \* SUCH DAMAGE.

\*/

# 1.67 bcrypt 3.2.0

### 1.67.1 Available under license:

Apache License
Version 2.0, January 2004
http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation

source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable

(except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and

may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify,

defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.68 pytest 6.2.5

## 1.68.1 Available under license:

The MIT License (MIT)

Copyright (c) 2004-2020 Holger Krekel and others

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.69 msgpack 1.0.3

### 1.69.1 Available under license:

Copyright (C) 2008-2011 INADA Naoki <songofacandy@gmail.com>

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.70 python-dotenv 0.19.0

### 1.70.1 Available under license:

python-dotenv Copyright (c) 2014, Saurabh Kumar

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of python-dotenv nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

django-dotenv-rw Copyright (c) 2013, Ted Tieken

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of django-dotenv nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Original django-dotenv Copyright (c) 2013, Jacob Kaplan-Moss

All rights reserved.

Redistribution and use in source and binary forms, with or without modification,

are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of django-dotenv nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.71 jsonschema 3.2.0

### 1.71.1 Available under license:

Copyright (c) 2012 Julian Berman

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2013 Julian Berman

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.72 apk-tools 2.12.9-r3

### 1.72.1 Available under license:

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you

can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

#### TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program

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

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

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

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

on the Program.

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

- 3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
- a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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

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

- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

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

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

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

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical

distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE

THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and an idea of what it does.>

Copyright (C)< yyyy> < name of author>

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

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

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

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

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

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

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

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

<signature of Ty Coon >, 1 April 1989 Ty Coon, President of Vice This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

# 1.73 importlib-metadata 4.4

### 1.73.1 Available under license:

Copyright 2017-2019 Jason R. Coombs, Barry Warsaw

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.74 charset-normalizer 2.0.12

### 1.74.1 Available under license:

Included and Redistributed Files

17 files are included in the source distribution tar. They are used to verify the standard functions of this library. They are mandatory to run `pytest` but not required to make the lib usable after install. They DO NOT guarantee that the detection-coverage will not regress.

Those are EITHER pulled from Wikipedia \_(CC-BY-SA)\_ OR public domain archive. You SHALL NOT modify any of those files without explicit approval. MIT License

Copyright (c) 2019 TAHRI Ahmed R.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.75 attrs 22.1.0

## 1.75.1 Available under license:

The MIT License (MIT)

Copyright (c) 2015 Hynek Schlawack and the attrs contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.76 urllib3 1.26.10

## 1.76.1 Available under license:

MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal

in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.77 pycparser 2.21

## 1.77.1 Available under license:

pycparser -- A C parser in Python

Copyright (c) 2008-2020, Eli Bendersky All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Eli Bendersky nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## 1.78 pyyaml 6.0

### 1.78.1 Available under license:

Copyright (c) 2017-2021 Ingy dt Net Copyright (c) 2006-2016 Kirill Simonov

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.79 html5lib 1.1

### 1.79.1 Available under license:

Copyright (c) 2006-2013 James Graham and other contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION

OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2006-2013 James Graham, Geoffrey Sneddon, and other contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.80 distro 1.7.0

### 1.80.1 Available under license:

Thanks!

- \* https://github.com/andy-maier
- \* https://github.com/SethMichaelLarson
- \* https://github.com/asottile
- \* https://github.com/MartijnBraam
- \* https://github.com/funkyfuture
- \* https://github.com/adamjstewart
- \* https://github.com/xavfernandez
- \* https://github.com/xsuchy
- \* https://github.com/marcoceppi
- \* https://github.com/tgamblin
- \* https://github.com/sebix
- \* https://github.com/jdufresne

Apache License

Version 2.0, January 2004 http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent

to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work,

excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any

risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

## 1.81 colorama 0.4.5

### 1.81.1 Available under license:

Copyright (c) 2010 Jonathan Hartley All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holders, nor those of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.82 py3-retrying 1.3.3-r3

## 1.82.1 Available under license:

Copyright 2013 Ray Holder

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without

modifications, and in Source or Object form, provided that You meet the following conditions:

- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade

names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.

- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier

identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.83 wheel 0.37.1

## 1.83.1 Available under license:

"wheel" copyright (c) 2012-2014 Daniel Holth <dholth@fastmail.fm> and contributors.

The MIT License

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.84 python-setuptools 59.4.0

## 1.84.1 Available under license:

Copyright Jason R. Coombs

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.85 python-certifi 2021.10.08

# 1.85.1 Available under license:

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov 3 19:04:19 2011#

This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt). This file can be found in the mozilla source tree:

http://mxr.mozilla.org/mozilla/source/security/nss/lib/ckfw/builtins/certdata.txt?raw=1#

It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php\_curl, or with
an Apache+mod\_ssl webserver for SSL client authentication.

Just configure this file as the SSLCACertificateFile.#

### \*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at http://mozilla.org/MPL/2.0/.

\*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

@(#) \$RCSfile: certdata.txt,v \$ \$Revision: 1.80 \$ \$Date: 2011/11/03 15:11:58 \$

# 1.86 py3-pep 0.12.0-r2

## 1.86.1 Available under license:

The MIT License (MIT)

Copyright (c) 2017 Thomas Kluyver

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.87 chardet 5.0.0

## 1.87.1 Available under license:

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the

ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

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

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

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

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

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

# GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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

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

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

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

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

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

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

2. You may modify your copy or copies of the Library or any portion

of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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

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

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at

least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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

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

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
  - b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses

terminated so long as such parties remain in full compliance.

- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.
- 11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

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

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

This section is intended to make thoroughly clear what is believed to

be a consequence of the rest of this License.

- 12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

### **NO WARRANTY**

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR

CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

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

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

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

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

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

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

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

That's all there is to it!

# 1.88 python-setuptools 65.4.0

# 1.88.1 Available under license:

Copyright Jason R. Coombs

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.89 python 3.10.5-r0

# 1.89.1 Available under license:

Copyright (c) 2002 Jorge Acereda <a href="mailto:sacereda@users.sourceforge.net">jacereda@users.sourceforge.net</a> & Peter O'Gorman <a href="mailto:sourceforge.net">peter O'Gorman <a href="mailto:sourceforge.net">sourceforge.net</a> >

Portions may be copyright others, see the AUTHORS file included with this distribution.

Maintained by Peter O'Gorman <ogorman@users.sourceforge.net>

Bug Reports and other queries should go to <ogorman@users.sourceforge.net>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish,

distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Additional Conditions for this Windows binary build

\_\_\_\_\_

This program is linked with and uses Microsoft Distributable Code, copyrighted by Microsoft Corporation. The Microsoft Distributable Code is embedded in each .exe, .dll and .pyd file as a result of running the code through a linker.

If you further distribute programs that include the Microsoft Distributable Code, you must comply with the restrictions on distribution specified by Microsoft. In particular, you must require distributors and external end users to agree to terms that protect the Microsoft Distributable Code at least as much as Microsoft's own requirements for the Distributable Code. See Microsoft's documentation (included in its developer tools and on its website at microsoft.com) for specific details.

Redistribution of the Windows binary build of the Python interpreter complies with this agreement, provided that you do not:

- alter any copyright, trademark or patent notice in Microsoft's Distributable Code;
- use Microsoft's trademarks in your programs' names or in a way that suggests your programs come from or are endorsed by Microsoft;
- distribute Microsoft's Distributable Code to run on a platform other than Microsoft operating systems, run-time technologies or application platforms; or
- include Microsoft Distributable Code in malicious, deceptive or unlawful programs.

These restrictions apply only to the Microsoft Distributable Code as defined above, not to Python itself or any programs running on the Python interpreter. The redistribution of the Python interpreter and libraries is governed by the Python Software License included with this file, or by other licenses as marked.

X Window System License - X11R6.4

Copyright (c) 1998 The Open Group

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE OPEN GROUP BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of The Open Group shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization from The Open Group.

X Window System is a trademark of The Open Group libffi - Copyright (c) 1996-2003 Red Hat, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the ``Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL CYGNUS SOLUTIONS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper Copyright (c) 2001-2019 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This license applies to the bootstrapper application that is embedded within the installer. It has no impact on the licensing for the rest of the installer or Python itself, as no code covered by this license exists in any other part of the product.

---

Microsoft Reciprocal License (MS-RL)

This license governs use of the accompanying software. If you use the software, you accept this license. If you do not accept the license, do not use the software.

### 1. Definitions

The terms "reproduce," "reproduction," "derivative works," and "distribution" have the same meaning here as under U.S. copyright law.

A "contribution" is the original software, or any additions or changes to the software.

A "contributor" is any person that distributes its contribution under this license.

"Licensed patents" are a contributor's patent claims that read directly on its contribution.

## 2. Grant of Rights

(A) Copyright Grant- Subject to the terms of this license, including the license conditions and limitations in section

- 3, each contributor grants you a non-exclusive, worldwide, royalty-free copyright license to reproduce its contribution, prepare derivative works of its contribution, and distribute its contribution or any derivative works that you create.
- (B) Patent Grant- Subject to the terms of this license, including the license conditions and limitations in section 3, each contributor grants you a non-exclusive, worldwide, royalty-free license under its licensed patents to make, have made, use, sell, offer for sale, import, and/or otherwise dispose of its contribution in the software or derivative works of the contribution in the software.

#### 3. Conditions and Limitations

- (A) Reciprocal Grants- For any file you distribute that contains code from the software (in source code or binary format), you must provide recipients the source code to that file along with a copy of this license, which license will govern that file. You may license other files that are entirely your own work and do not contain code from the software under any terms you choose.
- (B) No Trademark License- This license does not grant you rights to use any contributors' name, logo, or trademarks.
- (C) If you bring a patent claim against any contributor over patents that you claim are infringed by the software, your patent license from such contributor to the software ends automatically.
- (D) If you distribute any portion of the software, you must retain all copyright, patent, trademark, and attribution notices that are present in the software.
- (E) If you distribute any portion of the software in source code form, you may do so only under this license by including a complete copy of this license with your distribution. If you distribute any portion of the software in compiled or object code form, you may only do so under a license that complies with this license.
- (F) The software is licensed "as-is." You bear the risk of using it. The contributors give no express warranties, guarantees or conditions. You may have additional consumer rights under your local laws which this license cannot change. To the extent permitted under your local laws, the contributors exclude the implied warranties of merchantability, fitness for a particular purpose and non-infringement.

### A. HISTORY OF THE SOFTWARE

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

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

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

All Python releases are Open Source (see http://www.opensource.org for

the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Deriv	red Year	r Ow	ner	GPL-
from			compatible? (1)		
				-	
0.9.0 thru 1.2		1991-1	.995 CV	VI :	yes
1.3 thru 1	.5.2 1.2	1995-	-1999 C	NRI	yes
1.6	1.5.2	2000	CNRI	no	
2.0	1.6	2000	BeOpen	.com n	О
1.6.1	1.6	2001	CNRI	yes	(2)
2.1	2.0+1.6	.1 2001	PSF	no	
2.0.1	2.0+1.6	5.1 2001	PSF	ye	S
2.1.1	2.1+2.0	0.1 2001	PSF	ye	S
2.1.2	2.1.1	2002	PSF	yes	
2.1.3	2.1.2	2002	PSF	yes	
2.2 and above 2.1.1 2001-now PSF yes					

### Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

## B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

\_\_\_\_\_\_

Python software and documentation are licensed under the Python Software Foundation License Version 2.

Starting with Python 3.8.6, examples, recipes, and other code in the documentation are dual licensed under the PSF License Version 2 and the Zero-Clause BSD license.

Some software incorporated into Python is under different licenses. The licenses are listed with code falling under that license.

#### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF. EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee

agrees to be bound by the terms and conditions of this License Agreement.

## BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

\_\_\_\_\_

#### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.

7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the internet using the following URL: http://hdl.handle.net/1895.22/1013".
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1,

#### OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

**ACCEPT** 

## CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

\_\_\_\_\_

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES

WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

### ZERO-CLAUSE BSD LICENSE FOR CODE IN THE PYTHON DOCUMENTATION

-----

Permission to use, copy, modify, and/or distribute this software for any purpose with or without fee is hereby granted.

THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

# 1.90 paramiko 2.11.0

# 1.90.1 Available under license:

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin Street, Suite 500, Boston, MA 02110-1335 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

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

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

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

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

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

# GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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

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

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

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

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

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

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

- 2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) The modified work must itself be a software library.
  - b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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

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

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

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

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

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

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the
     Sections above.
  - b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Library or works based on it.

- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.
- 11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

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

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

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

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

written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

### How to Apply These Terms to Your New Libraries

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

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

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Suite 500, Boston, MA 02110-1335 USA

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

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

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

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it!

# 1.91 jsonschema 4.16.0

### 1.91.1 Available under license:

Copyright (c) 2012 Julian Berman

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2013 Julian Berman

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.92 idna 3.4

### 1.92.1 Available under license:

**BSD 3-Clause License** 

Copyright (c) 2013-2021, Kim Davies All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE. EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.93 python-setuptools 58.1.0

### 1.93.1 Available under license:

Copyright Jason R. Coombs

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.94 futures 3.3.0

### 1.94.1 Available under license:

PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

\_\_\_\_\_

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.
- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material

breach of its terms and conditions.

- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

# 1.95 libffi 3.4.2-r1

### 1.95.1 Available under license:

The libffi source distribution contains certain code that is not part of libffi, and is only used as tooling to assist with the building and testing of libffi. This includes the msvcc.sh script used to wrap the Microsoft compiler with GNU compatible command-line options, make\_sunver.pl, and the libffi test code distributed in the testsuite/libffi.bhaible directory. This code is distributed with libffi for the purpose of convenience only, and libffi is in no way derived from this code.

msvcc.sh an testsuite/libffi.bhaible are both distributed under the terms of the GNU GPL version 2, as below.

### GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to

your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law:

that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

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

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If

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

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

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

- 3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
  - a) Accompany it with the complete corresponding machine-readable
     source code, which must be distributed under the terms of Sections
     1 and 2 above on a medium customarily used for software interchange; or,
  - b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
  - c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the

operating system on which the executable runs, unless that component itself accompanies the executable.

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

- 4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under

any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

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

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

- 8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

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

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

You should have received a copy of the GNU General Public License along

with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

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

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

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

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

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

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

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

libffi - Copyright (c) 1996-2021 Anthony Green, Red Hat, Inc and others. See source files for details.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the ``Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,

EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.96 python-requests 2.26.0

### 1.96.1 Available under license:

Requests

Copyright 2019 Kenneth Reitz

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a

cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise,

- any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

# 1.97 ply 3.11

### 1.97.1 Available under license:

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

# PLY (Python Lex-Yacc)

Version 3.11

[![Build Status](https://travis-ci.org/dabeaz/ply.svg?branch=master)](https://travis-ci.org/dabeaz/ply)

Copyright (C) 2001-2018 David M. Beazley (Dabeaz LLC) All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the David Beazley or Dabeaz LLC may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Introduction

PLY is a 100% Python implementation of the common parsing tools lex and yacc. Here are a few highlights:

PLY is very closely modeled after traditional lex/yacc.
 If you know how to use these tools in C, you will find PLY to be similar.

- PLY provides \*very\* extensive error reporting and diagnostic information to assist in parser construction. The original implementation was developed for instructional purposes. As a result, the system tries to identify the most common types of errors made by novice users.
- PLY provides full support for empty productions, error recovery, precedence specifiers, and moderately ambiguous grammars.
- Parsing is based on LR-parsing which is fast, memory efficient,
   better suited to large grammars, and which has a number of nice
   properties when dealing with syntax errors and other parsing problems.
   Currently, PLY builds its parsing tables using the LALR(1)
   algorithm used in yacc.
- PLY uses Python introspection features to build lexers and parsers.
   This greatly simplifies the task of parser construction since it reduces the number of files and eliminates the need to run a separate lex/yacc tool before running your program.
- PLY can be used to build parsers for "real" programming languages. Although it is not ultra-fast due to its Python implementation, PLY can be used to parse grammars consisting of several hundred rules (as might be found for a language like C). The lexer and LR parser are also reasonably efficient when parsing typically sized programs. People have used PLY to build parsers for C, C++, ADA, and other real programming languages.

How to Use

PLY consists of two files: lex.py and yacc.py. These are contained within the 'ply' directory which may also be used as a Python package. To use PLY, simply copy the 'ply' directory to your project and import lex and yacc from the associated 'ply' package. For example:

import ply.lex as lex import ply.yacc as yacc

Alternatively, you can copy just the files lex.py and yacc.py individually and use them as modules. For example:

import lex import yacc

The file setup.py can be used to install ply using distutils.

The file doc/ply.html contains complete documentation on how to use the system.

The example directory contains several different examples including a PLY specification for ANSI C as given in K&R 2nd Ed.

A simple example is found at the end of this document

#### Requirements

=========

PLY requires the use of Python 2.6 or greater. However, you should use the latest Python release if possible. It should work on just about any platform. PLY has been tested with both CPython and Jython. It also seems to work with IronPython.

#### Resources

\_\_\_\_\_

More information about PLY can be obtained on the PLY webpage at:

http://www.dabeaz.com/ply

For a detailed overview of parsing theory, consult the excellent book "Compilers: Principles, Techniques, and Tools" by Aho, Sethi, and Ullman. The topics found in "Lex & Yacc" by Levine, Mason, and Brown may also be useful.

The GitHub page for PLY can be found at:

https://github.com/dabeaz/ply

An old and relatively inactive discussion group for PLY is found at:

http://groups.google.com/group/ply-hack

#### Acknowledgments

\_\_\_\_\_

A special thanks is in order for all of the students in CS326 who suffered through about 25 different versions of these tools:-).

The CHANGES file acknowledges those who have contributed patches.

Elias Ioup did the first implementation of LALR(1) parsing in PLY-1.x. Andrew Waters and Markus Schoepflin were instrumental in reporting bugs and testing a revised LALR(1) implementation for PLY-2.0.

Special Note for PLY-3.0

\_\_\_\_\_

PLY-3.0 the first PLY release to support Python 3. However, backwards

compatibility with Python 2.6 is still preserved. PLY provides dual Python 2/3 compatibility by restricting its implementation to a common subset of basic language features. You should not convert PLY using 2to3--it is not necessary and may in fact break the implementation.

#### Example

======

Here is a simple example showing a PLY implementation of a calculator with variables.

```
# calc.py
# A simple calculator with variables.
tokens = (
  'NAME', 'NUMBER',
  'PLUS', 'MINUS', 'TIMES', 'DIVIDE', 'EQUALS',
  'LPAREN', 'RPAREN',
  )
# Tokens
t\_PLUS = r' + '
t\_MINUS = r'-'
t\_TIMES = r' \
t_DIVIDE = r'/'
t_EQUALS = r'='
t\_LPAREN = r'\('
t_RPAREN = r' \rangle'
t_NAME = r'[a-zA-Z_][a-zA-Z0-9_]*'
def t_NUMBER(t):
  r' d+'
  t.value = int(t.value)
  return t
# Ignored characters
t\_ignore = " \ \ t"
def t_newline(t):
  t.lexer.lineno += t.value.count("\n")
def t_error(t):
  print("Illegal character '%s'" % t.value[0])
```

```
t.lexer.skip(1)
# Build the lexer
import ply.lex as lex
lex.lex()
# Precedence rules for the arithmetic operators
precedence = (
  ('left','PLUS','MINUS'),
  ('left','TIMES','DIVIDE'),
  ('right', 'UMINUS'),
  )
# dictionary of names (for storing variables)
names = \{ \}
def p_statement_assign(p):
  'statement : NAME EQUALS expression'
  names[p[1]] = p[3]
def p_statement_expr(p):
  'statement: expression'
  print(p[1])
def p_expression_binop(p):
  "expression: expression PLUS expression
          | expression MINUS expression
          | expression TIMES expression
          expression DIVIDE expression"
  if p[2] == '+' : p[0] = p[1] + p[3]
  elif p[2] == '-': p[0] = p[1] - p[3]
  elif p[2] == '*': p[0] = p[1] * p[3]
  elif p[2] == '/': p[0] = p[1] / p[3]
def p_expression_uminus(p):
  'expression : MINUS expression %prec UMINUS'
  p[0] = -p[2]
def p_expression_group(p):
  'expression: LPAREN expression RPAREN'
  p[0] = p[2]
def p_expression_number(p):
  'expression: NUMBER'
  p[0] = p[1]
def p_expression_name(p):
  'expression: NAME'
```

```
try:
    p[0] = names[p[1]]
except LookupError:
    print("Undefined name '%s'" % p[1])
    p[0] = 0

def p_error(p):
    print("Syntax error at '%s'" % p.value)

import ply.yacc as yacc
yacc.yacc()

while True:
    try:
        s = raw_input('calc > ') # use input() on Python 3
except EOFError:
        break
yacc.parse(s)
```

#### **Bug Reports and Patches**

\_\_\_\_\_

My goal with PLY is to simply have a decent lex/yacc implementation for Python. As a general rule, I don't spend huge amounts of time working on it unless I receive very specific bug reports and/or patches to fix problems. I also try to incorporate submitted feature requests and enhancements into each new version. Please visit the PLY github page at https://github.com/dabeaz/ply to submit issues and pull requests. To contact me about bugs and/or new features, please send email to dave@dabeaz.com.

-- Dave

Found in path(s):

 $*/opt/cola/permits/1160874329\_1620411264.5/0/dabeaz-ply-3-11-0-g0f398b7-1-tar-gz/dabeaz-ply-0f398b7/README.md$ 

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

# This work is hereby released into the Public Domain. To view a copy of # the public domain dedication, visit

Found in path(s):

 $*/opt/cola/permits/1160874329\_1620411264.5/0/dabeaz-ply-3-11-0-g0f398b7-1-tar-gz/dabeaz-ply-0f398b7/example/GardenSnake/GardenSnake.py$ 

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

# All rights reserved

#### Found in path(s):

 $*/opt/cola/permits/1160874329\_1620411264.5/0/dabeaz-ply-3-11-0-g0f398b7-1-tar-gz/dabeaz-ply-0f398b7/ply/cpp.py$ 

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

- # All rights reserved.
- # Redistribution and use in source and binary forms, with or without
- # modification, are permitted provided that the following conditions are
- # \* Redistributions of source code must retain the above copyright notice,
- # this list of conditions and the following disclaimer.
- # \* Redistributions in binary form must reproduce the above copyright notice,
- # this list of conditions and the following disclaimer in the documentation
- # \* Neither the name of the David Beazley or Dabeaz LLC may be used to

#### Found in path(s):

- $*/opt/cola/permits/1160874329\_1620411264.5/0/dabeaz-ply-3-11-0-g0f398b7-1-tar-gz/dabeaz-ply-0f398b7/ply/lex.py$
- $*/opt/cola/permits/1160874329\_1620411264.5/0/dabeaz-ply-3-11-0-g0f398b7-1-tar-gz/dabeaz-ply-0f398b7/ply/yacc.py$

# 1.98 nghttp2 1.47.0-r0

### 1.98.1 Available under license:

LEGAL NOTICE INFORMATION

\_\_\_\_\_

All the files in this distribution are covered under the MIT license (see the file LICENSE) except some files mentioned below: Copyright (c) 2020 mruby developers

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2012, 2014, 2015, 2016 Tatsuhiro Tsujikawa Copyright (c) 2012, 2014, 2015, 2016 nghttp2 contributors

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. set yrange [0:]

set terminal pngcairo font 'Sans, 8' lw 1 size 1400,1024 set xtics rotate by -45 set style histogram errorbars gap 2 lw 1 set style fill solid border -1

If not otherwise noted, the extensions in this package are licensed

under the following license.

Copyright (c) 2010 by the contributors (see AUTHORS file). All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR

A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.99 aiosignal 1.2.0

## 1.99.1 Available under license :

- Contributors -

-----

Andrew Svetlov

Martijn Pieters

Nikolay Kim

Apache License

Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical

transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable

by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use,

- reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.
- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright 2013-2019 Nikolay Kim and Andrew Svetlov

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.100 py3-parsing 2.4.7-r3

### 1.100.1 Available under license:

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,

# 1.101 cpp 11.2.1\_git20220219-r5

### 1.101.1 Available under license:

GNU GENERAL PUBLIC LICENSE Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

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

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
  - b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
  - c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

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

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

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

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable
   source code, which must be distributed under the terms of Sections
   1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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

- 4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Program or works based on it.

- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

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

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

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

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among

countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

- 11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
- 12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

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

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

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

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

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

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

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

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

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

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

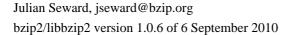
\_\_\_\_\_

This program, "bzip2", the associated library "libbzip2", and all documentation, are copyright (C) 1996-2010 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
- 3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
- 4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



-----

libffi - Copyright (c) 1996-2014 Anthony Green, Red Hat, Inc and others. See source files for details.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the ``Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED ``AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# GNU LESSER GENERAL PUBLIC LICENSE Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the

Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and

is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

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

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

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

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

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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

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

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

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

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

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

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

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1

above, provided that you also meet all of these conditions:

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

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

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

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

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

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do

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

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

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

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

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

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

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

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

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline

functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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

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

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of

performing this distribution.

- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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

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

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
  - b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.
- 11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

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

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

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

- 12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE

LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

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

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

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

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

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

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

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

Random Hacker.

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it! Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

The LLVM Project is under the Apache License v2.0 with LLVM Exceptions:

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all

other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed

as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the

Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

---- LLVM Exceptions to the Apache 2.0 License ----

As an exception, if, as a result of your compiling your source code, portions of this Software are embedded into an Object form of such source code, you

may redistribute such embedded portions in such Object form without complying with the conditions of Sections 4(a), 4(b) and 4(d) of the License.

In addition, if you combine or link compiled forms of this Software with software that is licensed under the GPLv2 ("Combined Software") and if a court of competent jurisdiction determines that the patent provision (Section 3), the indemnity provision (Section 9) or other Section of the License conflicts with the conditions of the GPLv2, you may retroactively and prospectively choose to deem waived or otherwise exclude such Section(s) of the License, but only in their entirety and only with respect to the Combined Software.

\_\_\_\_\_

Software from third parties included in the LLVM Project:

\_\_\_\_\_\_

The LLVM Project contains third party software which is under different license terms. All such code will be identified clearly using at least one of two mechanisms:

- 1) It will be in a separate directory tree with its own `LICENSE.txt` or `LICENSE` file at the top containing the specific license and restrictions which apply to that software, or
- 2) It will contain specific license and restriction terms at the top of every file.

\_\_\_\_\_\_

Legacy LLVM License (https://llvm.org/docs/DeveloperPolicy.html#legacy):

\_\_\_\_\_\_

The software contained in this directory tree is dual licensed under both the University of Illinois "BSD-Like" license and the MIT license. As a user of this code you may choose to use it under either license. As a contributor, you agree to allow your code to be used under both.

Full text of the relevant licenses is included below.

\_\_\_\_\_

University of Illinois/NCSA Open Source License

Copyright (c) 2017-2019 by the contributors listed in CREDITS.TXT

All rights reserved.

Developed by:

Threading Runtimes Team Intel Corporation http://www.intel.com Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal with the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimers.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimers in the documentation and/or other materials provided with the distribution.
- \* Neither the names of Intel Corporation Threading Runtimes Team nor the names of its contributors may be used to endorse or promote products derived from this Software without specific prior written permission.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.

\_\_\_\_\_

Copyright (c) 2017-2019 by the contributors listed in CREDITS.TXT

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

## TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of,

- publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution

notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing

the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

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

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

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

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

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

# GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

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

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

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

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

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

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

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

- 2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) The modified work must itself be a software library.
  - b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
  - c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
- d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

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

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

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

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

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

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

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

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

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

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

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

When a "work that uses the Library" uses material from a header file

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

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

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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

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

- a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system,

rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

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

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

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
  - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
  - b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.
- 11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

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

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed

through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

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

- 12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

## NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

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

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

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

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

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

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

You should also get your employer (if you work as a programmer) or your

school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

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

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it!

DRuntime: Runtime Library for the D Programming Language

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

GCC RUNTIME LIBRARY EXCEPTION

Version 3.1, 31 March 2009

Copyright (C) 2009 Free Software Foundation, Inc. <a href="http://fsf.org/">http://fsf.org/</a>

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This GCC Runtime Library Exception ("Exception") is an additional permission under section 7 of the GNU General Public License, version 3 ("GPLv3"). It applies to a given file (the "Runtime Library") that

bears a notice placed by the copyright holder of the file stating that the file is governed by GPLv3 along with this Exception.

When you use GCC to compile a program, GCC may combine portions of certain GCC header files and runtime libraries with the compiled program. The purpose of this Exception is to allow compilation of non-GPL (including proprietary) programs to use, in this way, the header files and runtime libraries covered by this Exception.

#### Definitions.

A file is an "Independent Module" if it either requires the Runtime Library for execution after a Compilation Process, or makes use of an interface provided by the Runtime Library, but is not otherwise based on the Runtime Library.

"GCC" means a version of the GNU Compiler Collection, with or without modifications, governed by version 3 (or a specified later version) of the GNU General Public License (GPL) with the option of using any subsequent versions published by the FSF.

"GPL-compatible Software" is software whose conditions of propagation, modification and use would permit combination with GCC in accord with the license of GCC.

"Target Code" refers to output from any compiler for a real or virtual target processor architecture, in executable form or suitable for input to an assembler, loader, linker and/or execution phase. Notwithstanding that, Target Code does not include data in any format that is used as a compiler intermediate representation, or used for producing a compiler intermediate representation.

The "Compilation Process" transforms code entirely represented in non-intermediate languages designed for human-written code, and/or in Java Virtual Machine byte code, into Target Code. Thus, for example, use of source code generators and preprocessors need not be considered part of the Compilation Process, since the Compilation Process can be understood as starting with the output of the generators or preprocessors.

A Compilation Process is "Eligible" if it is done using GCC, alone or with other GPL-compatible software, or if it is done without using any work based on GCC. For example, using non-GPL-compatible Software to optimize any GCC intermediate representations would not qualify as an Eligible Compilation Process.

1. Grant of Additional Permission.

You have permission to propagate a work of Target Code formed by combining the Runtime Library with Independent Modules, even if such propagation would otherwise violate the terms of GPLv3, provided that all Target Code was generated by Eligible Compilation Processes. You may then convey such a combination under terms of your choice, consistent with the licensing of the Independent Modules.

## 2. No Weakening of GCC Copyleft.

The availability of this Exception does not imply any general presumption that third-party software is unaffected by the copyleft requirements of the license of GCC.

# GNU LESSER GENERAL PUBLIC LICENSE Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <a href="http://fsf.org/">http://fsf.org/</a> Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

#### 0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

- a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or
- b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.
- 3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates (ten or fewer lines in length), you do both of the following:

- a) Give prominent notice with each copy of the object code that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the object code with a copy of the GNU GPL and this license document.
- 4. Combined Works.

You may convey a Combined Work under terms of your choice that, taken together, effectively do not restrict modification of the portions of the Library contained in the Combined Work and reverse engineering for debugging such modifications, if you also do each of

### the following:

- a) Give prominent notice with each copy of the Combined Work that the Library is used in it and that the Library and its use are covered by this License.
- b) Accompany the Combined Work with a copy of the GNU GPL and this license document.
- c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.
- d) Do one of the following:
  - 0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.
  - 1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.
- e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

### 5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

- a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.
- b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

### GNU GENERAL PUBLIC LICENSE Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <a href="http://fsf.org/">http://fsf.org/</a> Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to

share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

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

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

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

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

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

#### TERMS AND CONDITIONS

#### 0. Definitions.

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

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

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

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

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

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

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

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

#### 1. Source Code.

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

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

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

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

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

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

### 2. Basic Permissions.

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

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

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

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

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

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

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

### 4. Conveying Verbatim Copies.

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

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

### 5. Conveying Modified Source Versions.

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

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

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

### 6. Conveying Non-Source Forms.

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

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

- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

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

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status

of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

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

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

### 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by

this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material: or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the

additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

### 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a

party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

### 12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

### 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY

APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

### 16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### 17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or

(at your option) any later version.

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

You should have received a copy of the GNU General Public License along with this program. If not, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>>.

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

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

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

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <a href="http://www.gnu.org/philosophy/why-not-lgpl.html">http://www.gnu.org/philosophy/why-not-lgpl.html</a>.

compiler\_rt License

The compiler\_rt library is dual licensed under both the University of Illinois "BSD-Like" license and the MIT license. As a user of this code you may choose to use it under either license. As a contributor, you agree to allow your code to be used under both.

Full text of the relevant licenses is included below.

\_\_\_\_\_

University of Illinois/NCSA
Open Source License
Copyright (c) 2009-2012 by the contributors listed in CREDITS.TXT
All rights reserved.

Developed by:

LLVM Team

University of Illinois at Urbana-Champaign

http://llvm.org

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal with the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimers.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimers in the documentation and/or other materials provided with the distribution.
- \* Neither the names of the LLVM Team, University of Illinois at Urbana-Champaign, nor the names of its contributors may be used to endorse or promote products derived from this Software without specific prior written permission.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE SOFTWARE.

\_\_\_\_\_\_\_

Copyright (c) 2009-2012 by the contributors listed in CREDITS.TXT

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal

in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_\_

Copyrights and Licenses for Third Party Software Distributed with LLVM:

The LLVM software contains code written by third parties. Such software will have its own individual LICENSE.TXT file in the directory in which it appears. This file will describe the copyrights, license, and restrictions which apply to that code.

The disclaimer of warranty in the University of Illinois Open Source License applies to all code in the LLVM Distribution, and nothing in any of the other licenses gives permission to use the names of the LLVM Team or the University of Illinois to endorse or promote products derived from this Software.

The following pieces of software have additional or alternate copyrights, licenses, and/or restrictions:

Program Directory
-----mach\_override lib/interception/mach\_override
Copyright (c) 2019 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

\* Neither the name of Google Inc. nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. UNICODE, INC. LICENSE AGREEMENT - DATA FILES AND SOFTWARE

Unicode Data Files include all data files under the directories http://www.unicode.org/Public/, http://www.unicode.org/reports/, and http://www.unicode.org/cldr/data/. Unicode Data Files do not include PDF online code charts under the directory http://www.unicode.org/Public/. Software includes any source code published in the Unicode Standard or under the directories http://www.unicode.org/Public/, http://www.unicode.org/reports/, and http://www.unicode.org/cldr/data/.

NOTICE TO USER: Carefully read the following legal agreement. BY DOWNLOADING, INSTALLING, COPYING OR OTHERWISE USING UNICODE INC.'S DATA FILES ("DATA FILES"), AND/OR SOFTWARE ("SOFTWARE"), YOU UNEQUIVOCALLY ACCEPT, AND AGREE TO BE BOUND BY, ALL OF THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE, DO NOT DOWNLOAD, INSTALL, COPY, DISTRIBUTE OR USE THE DATA FILES OR SOFTWARE.

### COPYRIGHT AND PERMISSION NOTICE

Copyright 1991-2013 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in http://www.unicode.org/copyright.html.

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files and any associated documentation (the "Data Files") or Unicode software and any associated documentation (the "Software") to deal in the Data Files or Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Data Files or Software, and to permit persons to whom the Data Files or Software are furnished to do so, provided that (a) the above copyright notice(s) and this permission notice appear with all copies of the Data Files or Software, (b) both the above copyright notice(s) and this permission notice appear in associated documentation, and (c) there is clear notice in each modified Data File or in the Software as well as in the

documentation associated with the Data File(s) or Software that the data or software has been modified.

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE DATA FILES OR SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in these Data Files or Software without prior written authorization of the copyright holder.

## 1.102 zlib 1.2.12

### 1.102.1 Available under license:

\* zlib.h -- interface of the 'zlib' general purpose compression library version 1.2.12, March 11th, 2022

Copyright (C) 1995-2022 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

- The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
- 2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
- 3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly Mark Adler

jloup@gzip.org madler@alumni.caltech.edu

The data format used by the zlib library is described by RFCs (Request for

Comments) 1950 to 1952 in the files http://tools.ietf.org/html/rfc1950 (zlib format), rfc1951 (deflate format) and rfc1952 (gzip format).
\*/

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.103 importlib-resources 4.4

### 1.103.1 Available under license:

Copyright 2017-2019 Brett Cannon, Barry Warsaw

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.104 bzip2 1.0.8-r2

## 1.104.1 Available under license:

-----

This program, "bzip2", the associated library "libbzip2", and all documentation, are copyright (C) 1996-2019 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
- 3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
- 4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

021p2/110021p2 version 1.0.8 of 13 July 2017
bzip2/libbzip2 version 1.0.8 of 13 July 2019
5
Julian Seward, jseward@acm.org

# 1.105 yarl 1.8.1

## 1.105.1 Available under license:

Copyright 2016-2021, Andrew Svetlov and aio-libs team

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.106 python-requests 2.28.1

## 1.106.1 Available under license:

Requests

Copyright 2019 Kenneth Reitz

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity

exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided

that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity,

or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

# 1.107 busybox 1.35.0-r17

### 1.107.1 Available under license:

bzip2 applet in busybox is based on lightly-modified source of bzip2 version 1.0.4. bzip2 source is distributed under the following conditions (copied verbatim from LICENSE file)

This program, "bzip2", the associated library "libbzip2", and all documentation, are copyright (C) 1996-2006 Julian R Seward. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software in a product, an acknowledgment in the product documentation would be appreciated but is not required.
- 3. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
- 4. The name of the author may not be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS

INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK. jseward@bzip.org bzip2/libbzip2 version 1.0.4 of 20 December 2006 --- A note on GPL versions

BusyBox is distributed under version 2 of the General Public License (included in its entirety, below). Version 2 is the only version of this license which this version of BusyBox (or modified versions derived from this one) may be distributed under.

\_\_\_\_\_\_

### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you

conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

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

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

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

- 3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
  - a) Accompany it with the complete corresponding machine-readable
     source code, which must be distributed under the terms of Sections
     1 and 2 above on a medium customarily used for software interchange; or,
  - b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under

this License will not have their licenses terminated so long as such parties remain in full compliance.

- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

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

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

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

- 8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

### NO WARRANTY

- 11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
- 12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES.

INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

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

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

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

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

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

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

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

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

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

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

# 1.108 bcrypt 4.0.0

### 1.108.1 Available under license:

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity

exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.

- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
- (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
- (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided

that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity,

or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.109 py3-ordered-set 4.0.2-r3

# 1.109.1 Available under license:

Copyright (c) 2018 Luminoso Technologies, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# **1.110** webencodings **0.5.1**

# 1.110.1 Available under license:

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

:license: BSD, see LICENSE for details.

```
Found in path(s):
```

- $*/opt/cola/permits/1401468445\_1661617535.3616152/0/we bencoding s-0-5-1-1-tar-gz/we bencoding s-0-5-1-1-1-tar-gz/we bencoding s-0-5-1-1-1-tar-gz/we bencod$
- 0.5.1/webencodings/labels.py
- $*/opt/cola/permits/1401468445\_1661617535.3616152/0/we bencoding s-0-5-1-1-tar-gz/we bencoding s-0-5-1-1-1-tar-gz/we bencoding s-0-5-1-1-1-tar-gz/we bencod$
- 0.5.1/webencodings/\_\_init\_\_.py
- $*/opt/cola/permits/1401468445\_1661617535.3616152/0/we bencoding s-0-5-1-1-tar-gz/we bencoding s-0-5-1-1-1-tar-gz/we bencoding s-0-5-1-1-1-tar-gz/we bencod$
- 0.5.1/we bencodings/tests.py
- \* /opt/cola/permits/1401468445\_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-
- 0.5.1/webencodings/x\_user\_defined.py

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

```
from setuptools import setup, find_packages
import io
from os import path
import re

VERSION = re.search("VERSION = '([^']+)'", io.open(
    path.join(path.dirname(__file__), 'webencodings', '__init__.py'),
    encoding='utf-8'
).read().strip()).group(1)

LONG_DESCRIPTION = io.open(
    path.join(path.dirname(__file__), 'README.rst'),
    encoding='utf-8'
).read()
```

setup(

```
name='webencodings',
 version=VERSION,
 url='https://github.com/SimonSapin/python-webencodings',
 license='BSD',
 author='Simon Sapin',
 author_email='simon.sapin@exyr.org',
 maintainer='Geoffrey Sneddon',
 maintainer_email='me@gsnedders.com',
 description='Character encoding aliases for legacy web content',
 long_description=LONG_DESCRIPTION,
 classifiers=[
    'Development Status :: 4 - Beta',
    'Intended Audience :: Developers',
    'License :: OSI Approved :: BSD License',
    'Programming Language :: Python',
    'Programming Language :: Python :: 2',
    'Programming Language :: Python :: 2.6',
    'Programming Language :: Python :: 2.7',
    'Programming Language :: Python :: 3',
    'Programming Language :: Python :: 3.3',
    'Programming Language :: Python :: 3.4',
    'Programming Language:: Python:: 3.5',
    'Programming Language :: Python :: 3.6',
    'Programming Language :: Python :: Implementation :: CPython',
    'Programming Language :: Python :: Implementation :: PyPy',
    'Topic :: Internet :: WWW/HTTP',
 ],
 packages=find_packages(),
)
Found in path(s):
*/opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-
No license file was found, but licenses were detected in source scan.
Metadata-Version: 1.1
Name: webencodings
Version: 0.5.1
Summary: Character encoding aliases for legacy web content
Home-page: https://github.com/SimonSapin/python-webencodings
Author: Geoffrey Sneddon
Author-email: me@gsnedders.com
License: BSD
Description: python-webencodings
    This is a Python implementation of the `WHATWG Encoding standard
    <a href="http://encoding.spec.whatwg.org/>`_.">`_.
```

- \* Latest documentation: http://packages.python.org/webencodings/
- \* Source code and issue tracker:

https://github.com/gsnedders/python-webencodings

- \* PyPI releases: http://pypi.python.org/pypi/webencodings
- \* License: BSD
- \* Python 2.6+ and 3.3+

In order to be compatible with legacy web content when interpreting something like ``Content-Type: text/html; charset=latin1``, tools need to use a particular set of aliases for encoding labels as well as some overriding rules.

For example, "US-ASCII" and "iso-8859-1" on the web are actually aliases for "windows-1252", and an UTF-8 or UTF-16 BOM takes precedence over any other encoding declaration.

The Encoding standard defines all such details so that implementations do not have to reverse-engineer each other.

This module has encoding labels and BOM detection, but the actual implementation for encoders and decoders is Python's.

Platform: UNKNOWN

Classifier: Development Status :: 4 - Beta Classifier: Intended Audience :: Developers

Classifier: License :: OSI Approved :: BSD License

Classifier: Programming Language :: Python :: 2 Classifier: Programming Language :: Python :: 2.6 Classifier: Programming Language :: Python :: 2.7 Classifier: Programming Language :: Python :: 3.7 Classifier: Programming Language :: Python :: 3.3 Classifier: Programming Language :: Python :: 3.4 Classifier: Programming Language :: Python :: 3.5 Classifier: Programming Language :: Python :: 3.5

Classifier: Programming Language :: Python :: Implementation :: CPython Classifier: Programming Language :: Python :: Implementation :: PyPy

Classifier: Topic :: Internet :: WWW/HTTP

### Found in path(s):

- $*/opt/cola/permits/1401468445\_1661617535.3616152/0/we bencoding s-0-5-1-1-tar-gz/we bencoding s-0-5-1-1-1-tar-gz/we bencoding s-0-5-1-1-1-tar-gz/we bencod$
- 0.5.1/webencodings.egg-info/PKG-INFO
- $*/opt/cola/permits/1401468445\_1661617535.3616152/0/we bencoding s-0-5-1-1-tar-gz/we bencoding s-0.5.1/PKG-INFO$

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

,,,,,,

webencodings.mklabels

```
Regenarate the webencodings.labels module.
  :copyright: Copyright 2012 by Simon Sapin
  :license: BSD, see LICENSE for details.
,,,,,
import json
try:
  from urllib import urlopen
except ImportError:
  from urllib.request import urlopen
def assert_lower(string):
  assert string == string.lower()
  return string
def generate(url):
  parts = ["" \setminus
,,,,,,
  webencodings.labels
  Map encoding labels to their name.
  :copyright: Copyright 2012 by Simon Sapin
  :license: BSD, see LICENSE for details.
,,,,,,
# XXX Do not edit!
# This file is automatically generated by mklabels.py
LABELS = {
""]
  labels = [
    (repr(assert_lower(label)).lstrip('u'),
     repr(encoding['name']).lstrip('u'))
    for category in json.loads(urlopen(url).read().decode('ascii'))
    for encoding in category['encodings']
    for label in encoding['labels']]
  max_len = max(len(label) for label, name in labels)
  parts.extend(
```

```
%s:%s %s,\n' % (label, ' ' * (max_len - len(label)), name)
    for label, name in labels)
  parts.append('}')
 return ".join(parts)
if name == ' main ':
  print(generate('http://encoding.spec.whatwg.org/encodings.json'))
Found in path(s):
*/opt/cola/permits/1401468445_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-
0.5.1/webencodings/mklabels.py
No license file was found, but licenses were detected in source scan.
python-webencodings
This is a Python implementation of the `WHATWG Encoding standard
<a href="http://encoding.spec.whatwg.org/">c.http://encoding.spec.whatwg.org/">c.http://encoding.spec.whatwg.org/</a>.
* Latest documentation: http://packages.python.org/webencodings/
* Source code and issue tracker:
https://github.com/gsnedders/python-webencodings
* PyPI releases: http://pypi.python.org/pypi/webencodings
* License: BSD
* Python 2.6+ and 3.3+
In order to be compatible with legacy web content
when interpreting something like "Content-Type: text/html; charset=latin1",
tools need to use a particular set of aliases for encoding labels
as well as some overriding rules.
For example, "US-ASCII" and "iso-8859-1" on the web are actually
aliases for "windows-1252", and an UTF-8 or UTF-16 BOM takes precedence
over any other encoding declaration.
The Encoding standard defines all such details so that implementations do
not have to reverse-engineer each other.
This module has encoding labels and BOM detection,
but the actual implementation for encoders and decoders is Python's.
Found in path(s):
```

\*/opt/cola/permits/1401468445\_1661617535.3616152/0/webencodings-0-5-1-1-tar-gz/webencodings-

# 1.111 contextlib2 21.6.0

0.5.1/README.rst

# 1.111.1 Available under license:

Note: The type hints included in this package come from the typeshed project, and are hence distributed under the Apache License 2.0 rather than under the Python Software License that covers the module implementation and test suite.

### A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

contextlib2 is a derivative of the contextlib module distributed by the PSF as part of the Python standard library. According, it is itself redistributed under the PSF license (reproduced in full below). As the contextlib module was added only in Python 2.5, the licenses for earlier Python versions are not applicable and have not been included.

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

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

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

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases that included the contextlib module.

Release	Deriv	ved Ye	ar Ov	vner	GPL-
	from		co	mpatibl	le? (1)
2.5	2.4	2006	PSF	yes	
2.5.1	2.5	2007	PSF	yes	
2.5.2	2.5.1	2008	PSF	yes	
2.5.3	2.5.2	2008	PSF	yes	
2.6	2.5	2008	PSF	yes	
2.6.1	2.6	2008	PSF	yes	
2.6.2	2.6.1	2009	PSF	yes	

2.6.3	2.6.2	2009	PSF	yes
2.6.4	2.6.3	2009	PSF	yes
2.6.5	2.6.4	2010	PSF	yes
3.0	2.6	2008	PSF	yes
3.0.1	3.0	2009	PSF	yes
3.1	3.0.1	2009	PSF	yes
3.1.1	3.1	2009	PSF	yes
3.1.2	3.1.1	2010	PSF	yes
3.1.3	3.1.2	2010	PSF	yes
3.1.4	3.1.3	2011	PSF	yes
3.2	3.1	2011	PSF	yes
3.2.1	3.2	2011	PSF	yes
3.2.2	3.2.1	2011	PSF	yes
3.3	3.2	2012	PSF	yes

### Footnotes:

(1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

# B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

# PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

-----

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on

or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.

4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF. EVEN IF ADVISED OF THE POSSIBILITY THEREOF.

- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

# 1.112 py3-more-itertools 8.13.0-r0

# 1.112.1 Available under license:

Copyright (c) 2012 Erik Rose

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,

FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.113 multidict 6.0.2

# 1.113.1 Available under license:

Copyright 2016-2021 Andrew Svetlov and aio-libs team

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.114 python-certifi 2022.06.15

# 1.114.1 Available under license:

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov 3 19:04:19 2011#

This is a bundle of X.509 certificates of public Certificate Authorities
(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt). This file can be found in the mozilla source tree:
http://mxr.mozilla.org/mozilla/source/security/nss/lib/ckfw/builtins/certdata.txt?raw=1#
It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php\_curl, or with
an Apache+mod\_ssl webserver for SSL client authentication.
Just configure this file as the SSLCACertificateFile.#

\*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at http://mozilla.org/MPL/2.0/.

\*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

# 1.115 brotli 1.0.9-r6

## 1.115.1 Available under license:

Copyright (c) 2009, 2010, 2013-2016 by the Brotli Authors.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.116 readline 8.1.2-r0

# 1.116.1 Available under license:

GNU GENERAL PUBLIC LICENSE Version 2. June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to

your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law:

that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

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

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
  - b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
  - c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If

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

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

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

- 3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
  - a) Accompany it with the complete corresponding machine-readable
     source code, which must be distributed under the terms of Sections
     1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the

operating system on which the executable runs, unless that component itself accompanies the executable.

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

- 4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under

any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

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

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

- 8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

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

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

You should have received a copy of the GNU General Public License

along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

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

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

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

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

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

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

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

GNU GENERAL PUBLIC LICENSE Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <a href="http://fsf.org/">http://fsf.org/</a>
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast,

the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

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

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

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

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

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

### TERMS AND CONDITIONS

0. Definitions.

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

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

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

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

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

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

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

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

#### 1. Source Code.

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

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

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

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

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

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

### 2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited

permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

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

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

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

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

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

## 4. Conveying Verbatim Copies.

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

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

### 5. Conveying Modified Source Versions.

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

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

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

### 6. Conveying Non-Source Forms.

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

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium

customarily used for software interchange.

- b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.
- c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.
- d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.
- e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

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

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a

typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

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

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

### 7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately

under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

- a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or
- b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or
- c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or
- d) Limiting the use for publicity purposes of names of licensors or authors of the material; or
- e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or
- f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you

must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

### 8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

## 9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

#### 11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

### 13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

#### 14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

## 15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by

the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

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

You should have received a copy of the GNU General Public License along with this program. If not, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>>.

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

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

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

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <a href="http://www.gnu.org/licenses/">http://www.gnu.org/licenses/</a>>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <a href="http://www.gnu.org/philosophy/why-not-lgpl.html">http://www.gnu.org/philosophy/why-not-lgpl.html</a>.

@c The GNU Free Documentation License.

@center Version 1.3, 3 November 2008

@c This file is intended to be included within another document,@c hence no sectioning command or @node.

@display

Copyright @copyright{} 2000, 2001, 2002, 2007, 2008 Free Software Foundation, Inc. @uref{http://fsf.org/}

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed. @end display

@enumerate 0

@item

**PREAMBLE** 

The purpose of this License is to make a manual, textbook, or other functional and useful document @dfn{free} in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or noncommercially. Secondarily, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of ``copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License in order to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

### @item

### APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The ``Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as ``you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall

directly within that overall subject. (Thus, if the Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The ``Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A ``Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not ``Transparent" is called ``Opaque".

Examples of suitable formats for Transparent copies include plain @sc{ascii} without markup, Texinfo input format, La@TeX{} input format, @acronym{SGML} or @acronym{XML} using a publicly available @acronym{DTD}, and standard-conforming simple @acronym{HTML}, PostScript or @acronym{PDF} designed for human modification. Examples of transparent image formats include @acronym{PNG}, @acronym{XCF} and @acronym{JPG}. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, @acronym{SGML} or @acronym{XML} for which the @acronym{DTD} and/or processing tools are not generally available, and the machine-generated @acronym{HTML}, PostScript or @acronym{PDF} produced by some word processors for output purposes only.

The ``Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material

this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

The ``publisher" means any person or entity that distributes copies of the Document to the public.

A section ``Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as ``Acknowledgements", ``Dedications", ``Endorsements", or ``History".) To ``Preserve the Title" of such a section when you modify the Document means that it remains a section ``Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

#### @item

#### VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or noncommercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

### @item

#### COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify

you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

#### @item

#### MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

#### @enumerate A

#### @item

Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.

@item

List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.

#### @item

State on the Title page the name of the publisher of the Modified Version, as the publisher.

#### @item

Preserve all the copyright notices of the Document.

#### @item

Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.

#### @item

Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.

#### @item

Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.

#### @item

Include an unaltered copy of this License.

#### @item

Preserve the section Entitled "History", Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

### @item

Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.

@item

For any section Entitled ``Acknowledgements" or ``Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.

#### @item

Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.

#### @item

Delete any section Entitled `Endorsements". Such a section may not be included in the Modified Version.

#### @item

Do not retitle any existing section to be Entitled ``Endorsements" or to conflict in title with any Invariant Section.

#### @item

Preserve any Warranty Disclaimers.

@end enumerate

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled ``Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties---for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

#### @item

### COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled ``History" in the various original documents, forming one section Entitled ``History"; likewise combine any sections Entitled ``Acknowledgements", and any sections Entitled ``Dedications". You must delete all sections Entitled ``Endorsements."

#### @item

#### COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

#### @item

#### AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an ``aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit.

When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

#### @item

#### **TRANSLATION**

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled ``Acknowledgements", ``Dedications", or ``History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

#### @item

#### **TERMINATION**

You may not copy, modify, sublicense, or distribute the Document except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, or distribute it is void, and will automatically terminate your rights under this License.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, receipt of a copy of some or all of the same material does not give you any rights to use it.

#### @item

#### FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See @uref{http://www.gnu.org/copyleft/}.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License ``or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation. If the Document specifies that a proxy can decide which future versions of this License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Document.

#### @item

#### RELICENSING

"Massive Multiauthor Collaboration Site" (or "MMC Site") means any World Wide Web server that publishes copyrightable works and also provides prominent facilities for anybody to edit those works. A public wiki that anybody can edit is an example of such a server. A "Massive Multiauthor Collaboration" (or "MMC") contained in the site means any set of copyrightable works thus published on the MMC site.

``CC-BY-SA" means the Creative Commons Attribution-Share Alike 3.0 license published by Creative Commons Corporation, a not-for-profit

corporation with a principal place of business in San Francisco, California, as well as future copyleft versions of that license published by that same organization.

"Incorporate" means to publish or republish a Document, in whole or in part, as part of another Document.

An MMC is ``eligible for relicensing" if it is licensed under this License, and if all works that were first published under this License somewhere other than this MMC, and subsequently incorporated in whole or in part into the MMC, (1) had no cover texts or invariant sections, and (2) were thus incorporated prior to November 1, 2008.

The operator of an MMC Site may republish an MMC contained in the site under CC-BY-SA on the same site at any time before August 1, 2009, provided the MMC is eligible for relicensing.

@end enumerate

@page

@heading ADDENDUM: How to use this License for your documents

To use this License in a document you have written, include a copy of the License in the document and put the following copyright and license notices just after the title page:

@smallexample

@group

Copyright (C) @var{year} @var{your name}.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.3 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled `GNU Free Documentation License".

@end group

@end smallexample

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the ``with@dots{}Texts." line with this:

@smallexample

@group

with the Invariant Sections being @var{list their titles}, with the Front-Cover Texts being @var{list}, and with the Back-Cover Texts being @var{list}.

@end group

@end smallexample

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.

@c Local Variables:@c ispell-local-pdict: "ispell-dict"@c End:

## 1.117 git 2.36.2-r0

## 1.117.1 Available under license:

**BSD** License

Copyright (c) 2020, Google LLC All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of Google LLC nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE

OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
MIT License

Copyright (c) 2017:

Marc Stevens
Cryptology Group
Centrum Wiskunde & Informatica
P.O. Box 94079, 1090 GB Amsterdam, Netherlands

Dan Shumow Microsoft Research danshu@microsoft.com

marc@marc-stevens.nl

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

## Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by

the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program"

means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

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

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
- a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

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

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

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

- 3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
  - a) Accompany it with the complete corresponding machine-readable
     source code, which must be distributed under the terms of Sections
     1 and 2 above on a medium customarily used for software interchange; or,
  - b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
  - c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary

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

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

- 4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

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

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

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

- 8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

#### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

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

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

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

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

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

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

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

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

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

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Note that the only valid version of the GPL as far as this project is concerned is \_this\_ particular version of the license (ie v2, not v2.2 or v3.x or whatever), unless explicitly otherwise stated.

HOWEVER, in order to allow a migration to GPLv3 if that seems like a good idea, I also ask that people involved with the project make their preferences known. In particular, if you trust me to make that decision, you might note so in your copyright message, ie something like

This file is licensed under the GPL v2, or a later version at the discretion of Linus.

might avoid issues. But we can also just decide to synchronize and contact all copyright holders on record if/when the occasion arises.

Linus Torvalds	

#### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

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

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
  - b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
  - c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

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

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

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

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

- a) Accompany it with the complete corresponding machine-readable
   source code, which must be distributed under the terms of Sections
   1 and 2 above on a medium customarily used for software interchange; or,
- b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
- c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

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

- 4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and

all its terms and conditions for copying, distributing or modifying the Program or works based on it.

- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

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

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

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

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among

countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

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

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### **NO WARRANTY**

- 11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
- 12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

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

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

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

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

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

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

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

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

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

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

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

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

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

THIS OPTION IS EXPERIMENTAL! SHA-256 support is experimental and still in an early stage. A SHA-256 repository will in general not be able to share work with "regular" SHA-1 repositories. It should be assumed that, e.g., Git internal file formats in relation to SHA-256 repositories may change in backwards-incompatible ways. Only use `--object-format=sha256` for testing purposes.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems,

and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and

## 1.118 libffi 3.4.2-r1

### 1.118.1 Available under license:

The libffi source distribution contains certain code that is not part of libffi, and is only used as tooling to assist with the building and testing of libffi. This includes the msvcc.sh script used to wrap the Microsoft compiler with GNU compatible command-line options, make\_sunver.pl, and the libffi test code distributed in the testsuite/libffi.bhaible directory. This code is distributed with libffi for the purpose of convenience only, and libffi is in no way derived from this code.

msvcc.sh an testsuite/libffi.bhaible are both distributed under the terms of the GNU GPL version 2, as below.

## GNU GENERAL PUBLIC LICENSE Version 2. June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid

anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

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

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

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

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

## GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program).

Whether that is true depends on what the Program does.

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

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

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
  - b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
  - c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest

your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

- 3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
  - a) Accompany it with the complete corresponding machine-readable
     source code, which must be distributed under the terms of Sections
     1 and 2 above on a medium customarily used for software interchange; or,
  - b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
  - c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program

except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
- 7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed

through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

- 8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

#### NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989 Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

libffi - Copyright (c) 1996-2021 Anthony Green, Red Hat, Inc and others. See source files for details.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the ``Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED ``AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.119 cython 0.29.32

## 1.119.1 Available under license:

The original Pyrex code as of 2006-04 is licensed under the following license: "Copyright stuff: Pyrex is free of restrictions. You may use, redistribute, modify and distribute modified versions."

-----

Cython, which derives from Pyrex, is licensed under the Apache 2.0 Software License. More precisely, all modifications and new code made to go from Pyrex to Cython are so licensed.

See LICENSE.txt for more details.

-----

The output of a Cython compilation is NOT considered a derivative work of Cython. Specifically, though the compilation process may embed snippets of varying lengths into the final output, these snippets, as embedded in the output, do not encumber the resulting output with any license restrictions.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of

this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only

on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

### END OF TERMS AND CONDITIONS

# 1.120 typing-extensions 4.3.0

### 1.120.1 Available under license:

A. HISTORY OF THE SOFTWARE

\_\_\_\_\_

Python was created in the early 1990s by Guido van Rossum at Stichting Mathematisch Centrum (CWI, see http://www.cwi.nl) in the Netherlands as a successor of a language called ABC. Guido remains Python's principal author, although it includes many contributions from others.

In 1995, Guido continued his work on Python at the Corporation for National Research Initiatives (CNRI, see http://www.cnri.reston.va.us) in Reston, Virginia where he released several versions of the software.

In May 2000, Guido and the Python core development team moved to BeOpen.com to form the BeOpen PythonLabs team. In October of the same year, the PythonLabs team moved to Digital Creations (now Zope Corporation, see http://www.zope.com). In 2001, the Python Software Foundation (PSF, see http://www.python.org/psf/) was formed, a non-profit organization created specifically to own Python-related Intellectual Property. Zope Corporation is a sponsoring member of the PSF.

All Python releases are Open Source (see http://www.opensource.org for the Open Source Definition). Historically, most, but not all, Python releases have also been GPL-compatible; the table below summarizes the various releases.

Release	Derive	d Year	r Own	er GPL		
from			compatible? (1)			
0.9.0 thru	1.2	1991-1	.995 CW	I yes		
1.3 thru 1	.5.2 1.2	1995-	-1999 CN	NRI yes		
1.6	1.5.2	2000	CNRI	no		
2.0	1.6	2000	BeOpen.	com no		
1.6.1	1.6	2001	CNRI	yes (2)		
2.1	2.0+1.6.	1 2001	PSF	no		

2.0.1	2.0+1.6	5.1 2001	PSF	yes	
2.1.1	2.1+2.0	0.1 2001	PSF	yes	
2.1.2	2.1.1	2002	PSF	yes	
2.1.3	2.1.2	2002	PSF	yes	
2.2 and at	ove 2.1	.1 2001	l-now l	PSF	yes

#### Footnotes:

- (1) GPL-compatible doesn't mean that we're distributing Python under the GPL. All Python licenses, unlike the GPL, let you distribute a modified version without making your changes open source. The GPL-compatible licenses make it possible to combine Python with other software that is released under the GPL; the others don't.
- (2) According to Richard Stallman, 1.6.1 is not GPL-compatible, because its license has a choice of law clause. According to CNRI, however, Stallman's lawyer has told CNRI's lawyer that 1.6.1 is "not incompatible" with the GPL.

Thanks to the many outside volunteers who have worked under Guido's direction to make these releases possible.

## B. TERMS AND CONDITIONS FOR ACCESSING OR OTHERWISE USING PYTHON

#### PYTHON SOFTWARE FOUNDATION LICENSE VERSION 2

-----

- 1. This LICENSE AGREEMENT is between the Python Software Foundation ("PSF"), and the Individual or Organization ("Licensee") accessing and otherwise using this software ("Python") in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, PSF hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python alone or in any derivative version, provided, however, that PSF's License Agreement and PSF's notice of copyright, i.e., "Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 Python Software Foundation; All Rights Reserved" are retained in Python alone or in any derivative version prepared by Licensee.
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python.

- 4. PSF is making Python available to Licensee on an "AS IS" basis. PSF MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, PSF MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. PSF SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between PSF and Licensee. This License Agreement does not grant permission to use PSF trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By copying, installing or otherwise using Python, Licensee agrees to be bound by the terms and conditions of this License Agreement.

# BEOPEN.COM LICENSE AGREEMENT FOR PYTHON 2.0

### BEOPEN PYTHON OPEN SOURCE LICENSE AGREEMENT VERSION 1

- 1. This LICENSE AGREEMENT is between BeOpen.com ("BeOpen"), having an office at 160 Saratoga Avenue, Santa Clara, CA 95051, and the Individual or Organization ("Licensee") accessing and otherwise using this software in source or binary form and its associated documentation ("the Software").
- 2. Subject to the terms and conditions of this BeOpen Python License Agreement, BeOpen hereby grants Licensee a non-exclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use the Software alone or in any derivative version, provided, however, that the BeOpen Python License is retained in the Software, alone or in any derivative version prepared by Licensee.
- 3. BeOpen is making the Software available to Licensee on an "AS IS" basis. BEOPEN MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR

IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, BEOPEN MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF THE SOFTWARE WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.

- 4. BEOPEN SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF THE SOFTWARE FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF USING, MODIFYING OR DISTRIBUTING THE SOFTWARE, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 5. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 6. This License Agreement shall be governed by and interpreted in all respects by the law of the State of California, excluding conflict of law provisions. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between BeOpen and Licensee. This License Agreement does not grant permission to use BeOpen trademarks or trade names in a trademark sense to endorse or promote products or services of Licensee, or any third party. As an exception, the "BeOpen Python" logos available at http://www.pythonlabs.com/logos.html may be used according to the permissions granted on that web page.
- 7. By copying, installing or otherwise using the software, Licensee agrees to be bound by the terms and conditions of this License Agreement.

### CNRI LICENSE AGREEMENT FOR PYTHON 1.6.1

-----

- 1. This LICENSE AGREEMENT is between the Corporation for National Research Initiatives, having an office at 1895 Preston White Drive, Reston, VA 20191 ("CNRI"), and the Individual or Organization ("Licensee") accessing and otherwise using Python 1.6.1 software in source or binary form and its associated documentation.
- 2. Subject to the terms and conditions of this License Agreement, CNRI hereby grants Licensee a nonexclusive, royalty-free, world-wide license to reproduce, analyze, test, perform and/or display publicly, prepare derivative works, distribute, and otherwise use Python 1.6.1 alone or in any derivative version, provided, however, that CNRI's License Agreement and CNRI's notice of copyright, i.e., "Copyright (c) 1995-2001 Corporation for National Research Initiatives; All Rights Reserved" are retained in Python 1.6.1 alone or in any derivative version prepared by Licensee. Alternately, in lieu of CNRI's License Agreement, Licensee may substitute the following text (omitting the

- quotes): "Python 1.6.1 is made available subject to the terms and conditions in CNRI's License Agreement. This Agreement together with Python 1.6.1 may be located on the Internet using the following unique, persistent identifier (known as a handle): 1895.22/1013. This Agreement may also be obtained from a proxy server on the Internet using the following URL: http://hdl.handle.net/1895.22/1013".
- 3. In the event Licensee prepares a derivative work that is based on or incorporates Python 1.6.1 or any part thereof, and wants to make the derivative work available to others as provided herein, then Licensee hereby agrees to include in any such work a brief summary of the changes made to Python 1.6.1.
- 4. CNRI is making Python 1.6.1 available to Licensee on an "AS IS" basis. CNRI MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED. BY WAY OF EXAMPLE, BUT NOT LIMITATION, CNRI MAKES NO AND DISCLAIMS ANY REPRESENTATION OR WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR THAT THE USE OF PYTHON 1.6.1 WILL NOT INFRINGE ANY THIRD PARTY RIGHTS.
- 5. CNRI SHALL NOT BE LIABLE TO LICENSEE OR ANY OTHER USERS OF PYTHON 1.6.1 FOR ANY INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES OR LOSS AS A RESULT OF MODIFYING, DISTRIBUTING, OR OTHERWISE USING PYTHON 1.6.1, OR ANY DERIVATIVE THEREOF, EVEN IF ADVISED OF THE POSSIBILITY THEREOF.
- 6. This License Agreement will automatically terminate upon a material breach of its terms and conditions.
- 7. This License Agreement shall be governed by the federal intellectual property law of the United States, including without limitation the federal copyright law, and, to the extent such U.S. federal law does not apply, by the law of the Commonwealth of Virginia, excluding Virginia's conflict of law provisions. Notwithstanding the foregoing, with regard to derivative works based on Python 1.6.1 that incorporate non-separable material that was previously distributed under the GNU General Public License (GPL), the law of the Commonwealth of Virginia shall govern this License Agreement only as to issues arising under or with respect to Paragraphs 4, 5, and 7 of this License Agreement. Nothing in this License Agreement shall be deemed to create any relationship of agency, partnership, or joint venture between CNRI and Licensee. This License Agreement does not grant permission to use CNRI trademarks or trade name in a trademark sense to endorse or promote products or services of Licensee, or any third party.
- 8. By clicking on the "ACCEPT" button where indicated, or by copying, installing or otherwise using Python 1.6.1, Licensee agrees to be bound by the terms and conditions of this License Agreement.

#### CWI LICENSE AGREEMENT FOR PYTHON 0.9.0 THROUGH 1.2

\_\_\_\_\_

Copyright (c) 1991 - 1995, Stichting Mathematisch Centrum Amsterdam, The Netherlands. All rights reserved.

Permission to use, copy, modify, and distribute this software and its documentation for any purpose and without fee is hereby granted, provided that the above copyright notice appear in all copies and that both that copyright notice and this permission notice appear in supporting documentation, and that the name of Stichting Mathematisch Centrum or CWI not be used in advertising or publicity pertaining to distribution of the software without specific, written prior permission.

STICHTING MATHEMATISCH CENTRUM DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO EVENT SHALL STICHTING MATHEMATISCH CENTRUM BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

## 1.121 curl 7.83.1-r3

### 1.121.1 Available under license:

COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2022, Daniel Stenberg, <daniel@haxx.se>, and many contributors, see the THANKS file.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

# 1.122 python-requests 2.27.1

## 1.122.1 Available under license:

Requests Copyright 2019 Kenneth Reitz

Apache License
Version 2.0, January 2004
http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or

Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work

- or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work

- by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

# 1.123 alpine-keys 2.4-r1

### 1.123.1 Available under license:

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.124 toml 0.10.2

## 1.124.1 Available under license:

The MIT License

Copyright 2013-2019 William Pearson

Copyright 2015-2016 Julien Enselme

Copyright 2016 Google Inc.

Copyright 2017 Samuel Vasko

Copyright 2017 Nate Prewitt

Copyright 2017 Jack Evans

Copyright 2019 Filippo Broggini

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in

all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

## 1.125 ca-certificates 20220614-r0

### 1.125.1 Available under license:

No license file was found, but licenses were detected in source scan.

```
/* c_rehash.c - Create hash symlinks for certificates
* C implementation based on the original Perl and shell versions
* Copyright (c) 2013-2014 Timo Teräs <timo.teras@iki.fi>
* All rights reserved.
* This software is licensed under the MIT License.
* Full license available at: http://opensource.org/licenses/MIT
*/
Found in path(s):
*/opt/cola/permits/1376394069_1659497040.3993607/0/ca-certificates-20220614-tar-bz2/ca-certificates-
20220614/c rehash.c
No license file was found, but licenses were detected in source scan.
# This Source Code Form is subject to the terms of the Mozilla Public
# License, v. 2.0. If a copy of the MPL was not distributed with this
# file, You can obtain one at http://mozilla.org/MPL/2.0/.
# certdata.txt
# This file contains the object definitions for the certs and other
# information "built into" NSS.
# Object definitions:
# Certificates
# -- Attribute --
  -- value --
```

CK\_OBJECT\_CLASS CKO\_CERTIFICATE

# CKA\_CLASS

```
# CKA_TOKEN
                      CK_BBOOL
                                      CK_TRUE
# CKA_PRIVATE
                       CK_BBOOL
                                       CK FALSE
# CKA_MODIFIABLE
                         CK_BBOOL
   CK_FALSE
# CKA_LABEL
                      UTF8
                                  (varies)
# CKA_CERTIFICATE_TYPE
                             CK_CERTIFICATE_TYPE CKC_X_509
# CKA_SUBJECT
                       DER+base64
                                      (varies)
# CKA ID
                    byte array
                                (varies)
# CKA_ISSUER
                      DER+base64
                                     (varies)
# CKA_SERIAL_NUMBER
                            DER+base64
   (varies)
# CKA VALUE
                      DER+base64
                                     (varies)
# CKA_NSS_EMAIL
                         ASCII7
                                     (unused here)
# CKA_NSS_SERVER_DISTRUST_AFTER DER+base64
  (varies)
# CKA_NSS_EMAIL_DISTRUST_AFTER DER+base64
   (varies)
# Trust
#
# -- Attribute --
                  -- type --
                             -- value --
# CKA CLASS
                     CK OBJECT CLASS CKO TRUST
# CKA_TOKEN
                      CK_BBOOL
                                     CK_TRUE
# CKA_PRIVATE
                       CK_BBOOL
                                      CK_FALSE
# CKA MODIFIABLE
                         CK BBOOL
  CK FALSE
# CKA_LABEL
                      UTF8
                                  (varies)
# CKA_ISSUER
                      DER+base64
                                    (varies)
# CKA_SERIAL_NUMBER
                           DER+base64
  (varies)
# CKA_CERT_HASH
                         binary+base64
                                       (varies)
# CKA EXPIRES
                      CK DATE
                                     (not used here)
# CKA_TRUST_DIGITAL_SIGNATURE CK_TRUST
  (varies)
# CKA_TRUST_NON_REPUDIATION CK_TRUST
  (varies)
# CKA_TRUST_KEY_ENCIPHERMENT CK_TRUST
   (varies)
# CKA_TRUST_DATA_ENCIPHERMENT CK_TRUST
  (varies)
# CKA_TRUST_KEY_AGREEMENT
                               CK_TRUST
   (varies)
# CKA_TRUST_KEY_CERT_SIGN CK_TRUST
  (varies)
# CKA_TRUST_CRL_SIGN
                           CK_TRUST
  (varies)
# CKA_TRUST_SERVER_AUTH
                              CK_TRUST
   (varies)
# CKA_TRUST_CLIENT_AUTH
                              CK_TRUST
   (varies)
# CKA_TRUST_CODE_SIGNING
                              CK_TRUST
   (varies)
# CKA_TRUST_EMAIL_PROTECTION CK_TRUST
  (varies)
# CKA_TRUST_IPSEC_END_SYSTEM CK_TRUST
  (varies)
# CKA_TRUST_IPSEC_TUNNEL
                              CK_TRUST
   (varies)
# CKA_TRUST_IPSEC_USER
                            CK_TRUST
   (varies)
# CKA_TRUST_TIME_STAMPING
                               CK_TRUST
  (varies)
# CKA_TRUST_STEP_UP_APPROVED CK_BBOOL
   (varies)
# (other trust attributes can be defined)
#
# The object to tell NSS that this is a root list and we don't
# have to go looking for others.
```

```
#
```

**BEGINDATA** 

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_BUILTIN\_ROOT\_LIST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "Mozilla Builtin Roots"

#

# Certificate "GlobalSign Root CA"

#

# Issuer: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE

# Serial Number:04:00:00:00:00:01:15:4b:5a:c3:94

# Subject: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE

# Not Valid Before: Tue Sep 01 12:00:00 1998

# Not Valid After: Fri Jan 28 12:00:00 2028

# Fingerprint (SHA-256):

EB:D4:10:40:E4:BB:3E:C7:42:C9:E3:81:D3:1E:F2:A4:1A:48:B6:68:5C:96:E7:CE:F3:C1:DF:6C:D4:33:1C:99

# Fingerprint (SHA1): B1:BC:96:8B:D4:F4:9D:62:2A:A8:9A:81:F2:15:01:52:A4:1D:82:9C

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061

 $\label{eq:condition} $$ \031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154$ 

\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003

\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031

 $\label{eq:condition} $$ \006\003\125\004\003\022\107\154\157\142\141\154\123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\147 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 123\151 = 1$ 

\156\040\122\157\157\164\040\103\101

**END** 

CKA\_ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061

 $\label{eq:condition} $$ \001\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154$ 

\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003

 $\label{eq:condition} $$ 125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031 $$$ 

 $\\ \\ 006 \\ 003 \\ 125 \\ 004 \\ 003 \\ 023 \\ 022 \\ 107 \\ 154 \\ 157 \\ 142 \\ 141 \\ 154 \\ 123 \\ 151 \\ 147 \\$ 

\156\040\122\157\157\164\040\103\101

**END** 

#### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\165\060\202\002\135\240\003\002\001\002\002\013\004

\000\000\000\000\000\001\025\113\132\303\224\060\015\006\011\052\206

\110\206\367\015\001\001\005\005\000\060\127\061\013\060\011\006 \003\125\004\006\023\002\102\105\061\031\060\027\006\003\125\004 \012\023\020\107\154\157\142\141\154\123\151\147\156\040\156\166 \055\163\141\061\020\060\016\006\003\125\004\013\023\007\122\157 \157\164\040\103\101\061\033\060\031\006\003\125\004\003\023\022 \107\154\157\142\141\154\123\151\147\156\040\122\157\157\164\040 \103\101\060\036\027\015\071\070\060\071\060\061\061\062\060\060 \060\060\132\027\015\062\070\060\061\062\070\061\062\060\060  $\label{eq:condition} $$ \060\132\060\127\061\013\060\011\006\003\125\004\006\023\002\102$ \105\061\031\060\027\006\003\125\004\012\023\020\107\154\157\142 \141\154\123\151\147\156\040\156\166\055\163\141\061\020\060\016  $\label{eq:condition} $$ \006\003\125\004\013\023\007\122\157\157\164\040\103\101\061\033$ \060\031\006\003\125\004\003\023\022\107\154\157\142\141\154\123 \151\147\156\040\122\157\157\164\040\103\101\060\202\001\042\060  $\label{eq:condition} $$ \0.015\0.06\0.01\0.05\0.00\0.003\0.001\0.001\0.001\0.005\0.000\0.003\0.000 $$$ \001\017\000\060\202\001\012\002\202\001\001\000\332\016\346\231 \215\316\243\343\117\212\176\373\361\213\203\045\153\352\110\037 \361\052\260\271\225\021\004\275\360\143\321\342\147\146\317\034 \335\317\033\110\053\356\215\211\216\232\257\051\200\145\253\351  $\label{eq:condition} $$ 307 \times 5 \times 22 \times 313 \times 253 \times 114 \times 160 \times 007 \times 41 \times 075 \times 12 \times 060 \times 315 \times 2515$ \117\370\335\324\214\120\025\034\357\120\356\304\056\367\374\351 \122\362\221\175\340\155\325\065\060\216\136\103\163\362\101\351  $\label{eq:condition} $$ \frac{325}{152}\frac{343}{262}\frac{11}{072}\frac{071}{070}\frac{157}{006}\frac{074}{210}\frac{151}{133}\frac{052}{120} $$$ \115\305\247\124\270\154\211\314\233\371\074\312\345\375\211\365 \022\074\222\170\226\326\334\164\156\223\104\141\321\215\307\106 \262\165\016\206\350\031\212\325\155\154\325\170\026\225\242\351 \310\012\070\353\362\044\023\117\163\124\223\023\205\072\033\274  $\label{eq:condition} $$ \036\064\265\213\005\214\271\167\213\261\333\037\040\221\253\011 $$$ \123\156\220\316\173\067\164\271\160\107\221\042\121\143\026\171 \256\261\256\101\046\010\310\031\053\321\106\252\110\326\144\052  $\label{eq:condition} $$ 327 \times 03 \cdot 064 \times 77 \cdot 054 \cdot 052 \times 01154 \cdot 031 \cdot 103 \cdot 112 \cdot 007 \cdot 205 \cdot 347 \cdot 323 \cdot 174 \cdot 052 \cdot 052$ \366\041\150\357\352\362\122\237\177\223\220\317\002\003\001\000 \001\243\102\060\100\060\016\006\003\125\035\017\001\001\377\004 \004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004 \005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004 \024\140\173\146\032\105\015\227\312\211\120\057\175\004\315\064 \250\377\374\375\113\060\015\006\011\052\206\110\206\367\015\001  $\label{eq:condition} $$ \001\005\000\003\202\001\001\000\326\163\347\174\117\166\320 $$$ \215\277\354\272\242\276\064\305\050\062\265\174\374\154\234\054 \053\275\011\236\123\277\153\136\252\021\110\266\345\010\243\263 \312\075\141\115\323\106\011\263\076\303\240\343\143\125\033\362 \272\357\255\071\341\103\271\070\243\346\057\212\046\073\357\240 \120\126\371\306\012\375\070\315\304\013\160\121\224\227\230\004 \337\303\137\224\325\025\311\024\101\234\304\135\165\144\025\015 \377\125\060\354\206\217\377\015\357\054\271\143\106\366\252\374 \337\274\151\375\056\022\110\144\232\340\225\360\246\357\051\217 \001\261\025\265\014\035\245\376\151\054\151\044\170\036\263\247 \034\161\142\356\312\310\227\254\027\135\212\302\370\107\206\156

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "GlobalSign Root CA"
- # Issuer: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE
- # Serial Number:04:00:00:00:00:01:15:4b:5a:c3:94
- # Subject: CN=GlobalSign Root CA,OU=Root CA,O=GlobalSign nv-sa,C=BE
- # Not Valid Before: Tue Sep 01 12:00:00 1998
- # Not Valid After: Fri Jan 28 12:00:00 2028
- # Fingerprint (SHA-256):

EB:D4:10:40:E4:BB:3E:C7:42:C9:E3:81:D3:1E:F2:A4:1A:48:B6:68:5C:96:E7:CE:F3:C1:DF:6C:D4:33:1C:99

# Fingerprint (SHA1): B1:BC:96:8B:D4:F4:9D:62:2A:A8:9A:81:F2:15:01:52:A4:1D:82:9C

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "GlobalSign Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\261\274\226\213\324\364\235\142\052\250\232\201\362\025\001\122

 $\verb|244|035|202|234|$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \076\105\122\025\011\121\222\341\267\135\067\237\261\207\051\212 $$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\127\061\013\060\011\006\003\125\004\006\023\002\102\105\061

\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154

\123\151\147\156\040\156\166\055\163\141\061\020\060\016\006\003

\125\004\013\023\007\122\157\157\164\040\103\101\061\033\060\031

\006\003\125\004\003\023\022\107\154\157\142\141\154\123\151\147

 $\label{eq:condition} $$ 156\040\122\157\157\164\040\103\101$$ 

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\004\000\000\000\000\001\025\113\132\303\224

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Certificate "Verisign Class 1 Public Primary Certification Authority - G3"

#

# Issuer: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Serial Number:00:8b:5b:75:56:84:54:85:0b:00:cf:af:38:48:ce:b1:a4

# Subject: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Not Valid Before: Fri Oct 01 00:00:00 1999

# Not Valid After: Wed Jul 16 23:59:59 2036

# Fingerprint (SHA-256):

CB:B5:AF:18:5E:94:2A:24:02:F9:EA:CB:C0:ED:5B:B8:76:EE:A3:C1:22:36:23:D0:04:47:E4:F3:BA:55:4B:65

# Fingerprint (SHA1): 20:42:85:DC:F7:EB:76:41:95:57:8E:13:6B:D4:B7:D1:E9:8E:46:A5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Verisign Class 1 Public Primary Certification Authority - G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123

 $\label{eq:condition} $$ \frac{151}147\\156\\054\\040\\111\\1156\\143\\056\\061\\037\\060\\035\\006\\003\\125$ 

\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165

\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003

 $\label{eq:condition} $$ 125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145$$ 

\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106

 $\label{eq:condition} $$ \frac{157}{162}040\\141\\165\\164\\150\\157\\162\\151\\172\\145\\144\\040\\165\\163$ 

 $\label{eq:condition} $$ 145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023$$ 

\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040

 $\label{eq:condition} $$ \061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171$$ 

 $\\ 040\\ 103\\ 145\\ 162\\ 164\\ 151\\ 146\\ 151\\ 143\\ 141\\ 164\\ 151\\ 157\\ 156\\ 040\\ 101$ 

\165\164\150\157\162\151\164\171\040\055\040\107\063

**END** 

CKA\_ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\201\312\061\013\060\011\006\003\125\004\012\023\016\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\004\013\023\061\050\143\051\040\061\071\071\071\040\126\145\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106\163\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040\061\040\120\165\142\151\143\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101$ 

\165\164\150\157\162\151\164\171\040\055\040\107\063

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

\002\021\000\213\133\165\126\204\124\205\013\000\317\257\070\110 \316\261\244

**END** 

### CKA VALUE MULTILINE OCTAL

\060\202\004\032\060\202\003\002\002\021\000\213\133\165\126\204 \124\205\013\000\317\257\070\110\316\261\244\060\015\006\011\052 \206\110\206\367\015\001\001\005\005\000\060\201\312\061\013\060 \011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003 \156\143\056\061\037\060\035\006\003\125\004\013\023\026\126\145 \162\151\123\151\147\156\040\124\162\165\163\164\040\116\145\164  $\label{eq:condition} $$ \frac{167}{157}\frac{62}{153}\frac{061}{072}\frac{060}{070}\frac{006}{003}\frac{125}{004}\frac{013}{023}\frac{061}{050} $$$ \143\051\040\061\071\071\071\040\126\145\162\151\123\151\147\156 \054\040\111\156\143\056\040\055\040\106\157\162\040\141\165\164 \150\157\162\151\172\145\144\040\165\163\145\040\157\156\154\171 \061\105\060\103\006\003\125\004\003\023\074\126\145\162\151\123 \151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151 \146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151  $\label{eq:condition} $$ 164\171\040\055\040\107\063\060\036\027\015\071\071\061\060\060 $$$ \061\060\060\060\060\060\060\132\027\015\063\066\060\067\061\066 \062\063\065\071\065\071\132\060\201\312\061\013\060\011\006\003 \125\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012 \023\016\126\145\162\151\123\151\147\156\054\040\111\156\143\056 \061\037\060\035\006\003\125\004\013\023\026\126\145\162\151\123 \151\147\156\040\124\162\165\163\164\040\116\145\164\167\157\162 \153\061\072\060\070\006\003\125\004\013\023\061\050\143\051\040  $\\ \backslash 061 \backslash 071 \backslash 071 \backslash 071 \backslash 040 \backslash 126 \backslash 145 \backslash 162 \backslash 151 \backslash 123 \backslash 151 \backslash 147 \backslash 156 \backslash 054 \backslash 040 \backslash 1111 \backslash 126 \backslash$ \156\143\056\040\055\040\106\157\162\040\141\165\164\150\157\162 \151\172\145\144\040\165\163\145\040\157\156\154\171\061\105\060 \103\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156 \040\103\154\141\163\163\040\061\040\120\165\142\154\151\143\040 \120\162\151\155\141\162\171\040\103\145\162\164\151\146\151\143 \141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040 \055\040\107\063\060\202\001\042\060\015\006\011\052\206\110\206  $\label{eq:condition} $$ \367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012$  $\label{eq:condition} $$ \002\202\001\000\335\204\324\271\264\371\247\330\363\004\170 $$$ \234\336\075\334\154\023\026\331\172\335\044\121\146\300\307\046 \131\015\254\006\010\302\224\321\063\037\360\203\065\037\156\033 \310\336\252\156\025\116\124\047\357\304\155\032\354\013\343\016 \360\104\245\127\307\100\130\036\243\107\037\161\354\140\366\155 \224\310\030\071\355\376\102\030\126\337\344\114\111\020\170\116 \001\166\065\143\022\066\335\146\274\001\004\066\243\125\150\325 \242\066\011\254\253\041\046\124\006\255\077\312\024\340\254\312 \255\006\035\225\342\370\235\361\340\140\377\302\177\165\053\114

\314\332\376\207\231\041\352\272\376\076\124\327\322\131\170\333 \074\156\317\240\023\000\032\270\047\241\344\276\147\226\312\240 \305\263\234\335\311\165\236\353\060\232\137\243\315\331\256\170  $\label{eq:condition} $$ \031\077\043\351\134\333\051\275\255\125\310\033\124\214\143\366$$ \350\246\352\307\067\022\134\243\051\036\002\331\333\037\073\264  $\label{eq:condition} $$ 327 \cdot 017 \cdot 126 \cdot 107 \cdot 201 \cdot 025 \cdot 004 \cdot 112 \cdot 257 \cdot 203 \cdot 047 \cdot 321 \cdot 305 \cdot 130 \cdot 210 \cdot 301$ \335\366\252\247\243\030\332\150\252\155\021\121\341\277\145\153 \237\226\166\321\075\002\003\001\000\001\060\015\006\011\052\206 \110\206\367\015\001\001\005\005\000\003\202\001\001\000\253\146 \215\327\263\272\307\232\266\346\125\320\005\361\237\061\215\132  $\label{eq:condition} $$ \252\331\252\106\046\017\161\355\245\255\123\126\142\001\107\052$  $\label{eq:condition} $$ 104\351\376\077\164\013\023\233\271\364\115\033\262\321\137\262$ \266\322\210\134\263\237\315\313\324\247\331\140\225\204\072\370 \301\067\035\141\312\347\260\305\345\221\332\124\246\254\061\201  $\label{eq:condition} $$ \256\227\336\315\010\254\270\300\227\200\177\156\162\244\347\151 $$$ \023\225\145\037\304\223\074\375\171\217\004\324\076\117\352\367 \236\316\315\147\174\117\145\002\377\221\205\124\163\307\377\066 \367\206\055\354\320\136\117\377\021\237\162\006\326\270\032\361 \114\015\046\145\342\104\200\036\307\237\343\335\350\012\332\354 \245\040\200\151\150\241\117\176\341\153\317\007\101\372\203\216 \274\070\335\260\056\021\261\153\262\102\314\232\274\371\110\042 \171\112\031\017\262\034\076\040\164\331\152\303\276\362\050\170  $\label{eq:condition} $$ \023\126\171\117\155\120\352\033\260\265\127\261\067\146\130\043$ \363\334\017\337\012\207\304\357\206\005\325\070\024\140\231\243 \113\336\006\226\161\054\362\333\266\037\244\357\077\356

**END** 

# Trust for "Verisign Class 1 Public Primary Certification Authority - G3"

# Issuer: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Serial Number:00:8b:5b:75:56:84:54:85:0b:00:cf:af:38:48:ce:b1:a4

# Subject: CN=VeriSign Class 1 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US

# Not Valid Before: Fri Oct 01 00:00:00 1999

# Not Valid After: Wed Jul 16 23:59:59 2036

# Fingerprint (SHA-256):

CB:B5:AF:18:5E:94:2A:24:02:F9:EA:CB:C0:ED:5B:B8:76:EE:A3:C1:22:36:23:D0:04:47:E4:F3:BA:55:4B:65

# Fingerprint (SHA1): 20:42:85:DC:F7:EB:76:41:95:57:8E:13:6B:D4:B7:D1:E9:8E:46:A5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

```
CKA_LABEL UTF8 "Verisign Class 1 Public Primary Certification Authority - G3"
CKA CERT SHA1 HASH MULTILINE OCTAL
\040\102\205\334\367\353\166\101\225\127\216\023\153\324\267\321
\351\216\106\245
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\261\107\274\030\127\321\030\240\170\055\354\161\350\052\225\163
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123
\151\147\156\054\040\111\156\143\056\061\037\060\035\006\003\125
\004\013\023\026\126\145\162\151\123\151\147\156\040\124\162\165
\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003
\label{eq:condition} $$ \frac{125\\004\\013\\023\\061\\050\\143\\051\\040\\061\\071\\071\\071\\071\\040\\126\\145
\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\106
\label{eq:local_
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\label{eq:condition} $$ \061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171 $$
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171\040\055\040\107\063
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\021\000\213\133\165\126\204\124\205\013\000\317\257\070\110
\316\261\244
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Verisign Class 2 Public Primary Certification Authority - G3"
# Issuer: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For
authorized use only", OU=VeriSign Trust Network, O="VeriSign, Inc.", C=US
# Serial Number:61:70:cb:49:8c:5f:98:45:29:e7:b0:a6:d9:50:5b:7a
# Subject: CN=VeriSign Class 2 Public Primary Certification Authority - G3,OU="(c) 1999 VeriSign, Inc. - For
authorized use only", OU=VeriSign Trust Network, O="VeriSign, Inc.", C=US
# Not Valid Before: Fri Oct 01 00:00:00 1999
# Not Valid After: Wed Jul 16 23:59:59 2036
# Fingerprint (SHA-256):
92:A9:D9:83:3F:E1:94:4D:B3:66:E8:BF:AE:7A:95:B6:48:0C:2D:6C:6C:2A:1B:E6:5D:42:36:B6:08:FC:A1:BB
# Fingerprint (SHA1): 61:EF:43:D7:7F:CA:D4:61:51:BC:98:E0:C3:59:12:AF:9F:EB:63:11
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

### CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Verisign Class 2 Public Primary Certification Authority - G3" CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA SUBJECT MULTILINE OCTAL

 $\label{eq:controller} $$ \060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\0025\006\003\125\0004\012\023\016\126\145\162\151\123\151\147\156\0054\004\013\125\123\151\147\156\004\124\162\165\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\0004\013\023\061\050\143\051\040\061\071\071\071\070\1006\003\125\1004\013\151\147\156\054\040\111\156\143\1056\040\1055\1040\105\163\145\1040\157\156\154\171\061\105\060\103\106\003\125\004\003\023\074\126\145\162\151\123\151\147\156\0040\103\154\141\163\163\040\062\040\120\165\142\151\143\141\164\151\155\141\162\171\040\103\145\162\151\164\151\143\141\164\151\157\156\0040\101\165\164\151\164\171\0040\055\0040\107\063$ 

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\201\312\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\0025\006\003\125\0004\012\023\016\126\145\162\151\123\151\147\156\0054\004\013\125\126\145\162\151\123\151\147\156\004\0124\162\165\163\164\040\116\145\164\167\157\162\153\061\072\060\070\006\003\125\0004\013\023\061\050\143\051\040\061\071\071\071\040\126\145\162\151\123\151\147\156\054\040\111\156\143\056\040\055\040\105\163\145\040\157\156\154\171\061\105\060\103\105\006\003\125\004\003\023\074\126\145\162\151\123\151\147\156\0040\103\154\141\163\163\040\062\040\120\165\142\151\143\141\164\151\145\1157\156\040\101\157\156\040\101\1157\156\040\101\1165\164\151\145\145\1143\141\164\151\1157\156\040\101\1165\164\157\162\151\164\171\040\055\040\107\063$ 

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\141\160\313\111\214\137\230\105\051\347\260\246\331\120 \133\172

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\202\004\031\060\202\003\001\002\020\141\160\313\111\214\137 \\ \230\105\051\347\260\246\331\120\133\172\060\015\006\011\052\206 \\ \110\206\367\015\001\001\0005\0005\000\060\201\312\061\013\060\011 \\ \0006\003\125\0004\006\023\002\125\123\061\027\060\0025\006\003\125 \\ \0004\012\023\016\126\145\162\151\123\151\147\156\040\111\156 \\ \143\056\061\037\060\035\006\003\125\0004\013\023\026\126\145\162 \\ \151\123\151\147\156\040\124\162\165\163\164\040\116\145\164\167 \\ \157\162\153\061\072\060\070\006\003\125\0004\013\023\061\050\143 \\ \051\040\061\071\071\071\040\126\145\162\151\123\151\147\156\054 \\ \end{3}$ 

\040\111\156\143\056\040\055\040\106\157\162\040\141\165\164\150 \157\162\151\172\145\144\040\165\163\145\040\157\156\154\171\061 \105\060\103\006\003\125\004\003\023\074\126\145\162\151\123\151 \147\156\040\103\154\141\163\163\040\062\040\120\165\142\154\151 \143\040\120\162\151\155\141\162\171\040\103\145\162\164\151\146 \171\040\055\040\107\063\060\036\027\015\071\071\061\060\060\061 \060\060\060\060\060\060\132\027\015\063\066\060\067\061\066\062 \063\065\071\065\071\132\060\201\312\061\013\060\011\006\003\125 \004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023 \016\126\145\162\151\123\151\147\156\054\040\111\156\143\056\061  $\label{eq:condition} $$ \037\060\035\006\003\125\004\013\023\026\126\145\162\151\123\151 $$$ \147\156\040\124\162\165\163\164\040\116\145\164\167\157\162\153  $\label{eq:condition} $$ \001\072\060\070\006\003\125\004\013\023\061\050\143\051\040\061 $$$  $\\ \\071\\ \\071\\ \\040\\ \\126\\ \\145\\ \\145\\ \\162\\ \\151\\ \\123\\ \\151\\ \\147\\ \\156\\ \\054\\ \\040\\ \\111\\ \\156$ \143\056\040\055\040\106\157\162\040\141\165\164\150\157\162\151 \172\145\144\040\165\163\145\040\157\156\154\171\061\105\060\103 \006\003\125\004\003\023\074\126\145\162\151\123\151\147\156\040 \103\154\141\163\163\040\062\040\120\165\142\154\151\143\040\120 \164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055 \040\107\063\060\202\001\042\060\015\006\011\052\206\110\206\367 \202\001\001\000\257\012\015\302\325\054\333\147\271\055\345\224 \047\335\245\276\340\260\115\217\263\141\126\074\326\174\303\364 \315\076\206\313\242\210\342\341\330\244\151\305\265\342\277\301 \246\107\120\136\106\071\213\325\226\272\265\157\024\277\020\316  $\\ \langle 047 \rangle 223 \langle 236 \rangle 005 \rangle 107 \langle 233 \rangle 061 \rangle 172 \langle 023 \rangle 330 \rangle 037 \rangle 331 \rangle 323 \rangle 002 \rangle 067 \rangle 2132 \rangle 002 \rangle$ \255\054\107\360\216\201\006\247\015\060\014\353\367\074\017\040 \035\334\162\106\356\245\002\310\133\303\311\126\151\114\305\030  $\label{eq:condition} $$ 301\221\173\013\325\023\000\233\274\357\303\110\076\106\140\040 $$$ \205\052\325\220\266\315\213\240\314\062\335\267\375\100\125\262 \120\034\126\256\314\215\167\115\307\040\115\247\061\166\357\150 \222\212\220\036\010\201\126\262\255\151\243\122\320\313\034\304 \043\075\037\231\376\114\350\026\143\216\306\010\216\366\061\366 \322\372\345\166\335\265\034\222\243\111\315\315\001\315\150\315 \251\151\272\243\353\035\015\234\244\040\246\301\240\305\321\106 \305\371\021\140\250\137\004\175\362\032\366\045\102\141\017\304 \112\270\076\211\002\003\001\000\001\060\015\006\011\052\206\110 \206\367\015\001\001\005\005\000\003\202\001\001\000\064\046\025 \074\300\215\115\103\111\035\275\351\041\222\327\146\234\267\336 \305\270\320\344\135\137\166\042\300\046\371\204\072\072\371\214 \265\373\354\140\361\350\316\004\260\310\335\247\003\217\060\363 \230\337\244\346\244\061\337\323\034\013\106\334\162\040\077\256 \356\005\074\244\063\077\013\071\254\160\170\163\113\231\053\337  $\label{eq:condition} $$ \060\302\124\260\250\073\125\241\376\026\050\315\102\275\164\156$$ \200\333\047\104\247\316\104\135\324\033\220\230\015\036\102\224

 $\label{eq:control_control_control_control_control} $$ \aligned $$ 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# For Email Distrust After: Wed Aug 31 00:00:00 2022

 ${\tt CKA\_NSS\_EMAIL\_DISTRUST\_AFTER\ MULTILINE\_OCTAL}$ 

 $\label{eq:condition} $$ \062\062\060\070\063\061\060\060\060\060\060\060\132$$ 

**END** 

- # Trust for "Verisign Class 2 Public Primary Certification Authority G3"
- # Issuer: CN=VeriSign Class 2 Public Primary Certification Authority G3,OU="(c) 1999 VeriSign, Inc. For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US
- # Serial Number:61:70:cb:49:8c:5f:98:45:29:e7:b0:a6:d9:50:5b:7a
- # Subject: CN=VeriSign Class 2 Public Primary Certification Authority G3,OU="(c) 1999 VeriSign, Inc. For authorized use only",OU=VeriSign Trust Network,O="VeriSign, Inc.",C=US
- # Not Valid Before: Fri Oct 01 00:00:00 1999
- # Not Valid After: Wed Jul 16 23:59:59 2036
- # Fingerprint (SHA-256):
- 92:A9:D9:83:3F:E1:94:4D:B3:66:E8:BF:AE:7A:95:B6:48:0C:2D:6C:6C:2A:1B:E6:5D:42:36:B6:08:FC:A1:BB
- # Fingerprint (SHA1): 61:EF:43:D7:7F:CA:D4:61:51:BC:98:E0:C3:59:12:AF:9F:EB:63:11

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Verisign Class 2 Public Primary Certification Authority - G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\370\276\304\143\042\311\250\106\164\213\270\035\036\112\053\366 END

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\201\312\006\003\125\0004\003\125\0004\006\0023\002\125\123\006\0025\006\0003\125\0004\012\023\016\126\145\162\151\123\151\147\156\004\0124\162\155\123\151\147\156\004\124\162\155\162\151\123\151\147\156\004\124\162\155\162\153\006\1072\006\0070\006\003\125\0004\013\023\006\1\050\143\051\004\006\1071\071\071\040\126\145\162\151\123\151\147\156\054\004\0111\156\143\056\004\0055\004\0106$ 

```
\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165\163
\145\040\157\156\154\171\061\105\060\103\006\003\125\004\003\023
\074\126\145\162\151\123\151\147\156\040\103\154\141\163\163\040
\label{eq:condition} $$ \062\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171 $$
\\ \\ 040\\ \\ 103\\ \\ 145\\ \\ 162\\ \\ 164\\ \\ 151\\ \\ 146\\ \\ 151\\ \\ 143\\ \\ 141\\ \\ 164\\ \\ 151\\ \\ 157\\ \\ 156\\ \\ 040\\ \\ 101
\165\164\150\157\162\151\164\171\040\055\040\107\063
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\141\160\313\111\214\137\230\105\051\347\260\246\331\120
\133\172
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Entrust.net Premium 2048 Secure Server CA"
# Issuer: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net
Limited, OU=www.entrust.net/CPS 2048 incorp. by ref. (limits liab.), O=Entrust.net
# Serial Number: 946069240 (0x3863def8)
# Subject: CN=Entrust.net Certification Authority (2048), OU=(c) 1999 Entrust.net
Limited, OU=www.entrust.net/CPS 2048 incorp. by ref. (limits liab.), O=Entrust.net
# Not Valid Before: Fri Dec 24 17:50:51 1999
# Not Valid After: Tue Jul 24 14:15:12 2029
# Fingerprint (SHA-256):
6D:C4:71:72:E0:1C:BC:B0:BF:62:58:0D:89:5F:E2:B8:AC:9A:D4:F8:73:80:1E:0C:10:B9:C8:37:D2:1E:B1:77
# Fingerprint (SHA1): 50:30:06:09:1D:97:D4:F5:AE:39:F7:CB:E7:92:7D:7D:65:2D:34:31
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA LABEL UTF8 "Entrust.net Premium 2048 Secure Server CA"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156
\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125
\\ \\004\\ \\013\\ \\024\\ \\067\\ \\167\\ \\167\\ \\167\\ \\056\\ \\145\\ \\156\\ \\164\\ \\162\\ \\165\\ \\163\\ \\164\\ \\056
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\071\040\105
\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164
\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
\040\050\062\060\064\070\051
```

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:control} $$ \004\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125\004\013\024\067\167\167\167\167\165\145\156\164\162\165\163\164\056\145\156\164\162\165\163\164\151\141\142\056\051\061\045\060\043\006\003\125\004\013\023\034\050\143\051\040\061\071\071\071\071\040\105\156\164\162\165\163\164\056\156\145\164\040\114\151\155\151\164\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\050\062\060\064\070\051$ 

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\070\143\336\370

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\052\060\202\003\022\240\003\002\001\002\002\004\070 \143\336\370\060\015\006\011\052\206\110\206\367\015\001\001\005  $\label{eq:condition} $$ \005\000\060\201\264\061\024\060\022\006\003\125\004\012\023\013$ \105\156\164\162\165\163\164\056\156\145\164\061\100\060\076\006 \003\125\004\013\024\067\167\167\167\056\145\156\164\162\165\163 \164\056\156\145\164\057\103\120\123\137\062\060\064\070\040\151 \156\143\157\162\160\056\040\142\171\040\162\145\146\056\040\050 \154\151\155\151\164\163\040\154\151\141\142\056\051\061\045\060 \043\006\003\125\004\013\023\034\050\143\051\040\061\071\071\071 \040\105\156\164\162\165\163\164\056\156\145\164\040\114\151\155 \151\164\145\144\061\063\060\061\006\003\125\004\003\023\052\105 \156\164\162\165\163\164\056\156\145\164\040\103\145\162\164\151 \146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151 \164\171\040\050\062\060\064\070\051\060\036\027\015\071\071\061 \062\062\064\061\067\065\060\065\061\132\027\015\062\071\060\067 \062\064\061\064\061\065\061\062\132\060\201\264\061\024\060\022 \006\003\125\004\012\023\013\105\156\164\162\165\163\164\056\156 \145\164\061\100\060\076\006\003\125\004\013\024\067\167\167\167  $\label{eq:condition} $$ \056\145\156\164\162\165\163\164\056\156\145\164\057\103\120\123$  $\label{eq:condition} $$137\062\060\064\070\040\151\156\143\157\162\160\056\040\142\171$ \040\162\145\146\056\040\050\154\151\155\151\164\163\040\154\151 \141\142\056\051\061\045\060\043\006\003\125\004\013\023\034\050 \143\051\040\061\071\071\071\040\105\156\164\162\165\163\164\056 \156\145\164\040\114\151\155\151\164\145\144\061\063\060\061\006 \003\125\004\003\023\052\105\156\164\162\165\163\164\056\156\145 \164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040 \101\165\164\150\157\162\151\164\171\040\050\062\060\064\070\051 \060\202\001\042\060\015\006\011\052\206\110\206\367\015\001\001

\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001\001 \000\255\115\113\251\022\206\262\352\243\040\007\025\026\144\052  $\label{eq:condition} $$ \053\113\321\277\013\112\115\216\355\200\166\245\147\267\170\100 $$$ \300\163\102\310\150\300\333\123\053\335\136\270\166\230\065\223 \213\032\235\174\023\072\016\037\133\267\036\317\345\044\024\036 \261\201\251\215\175\270\314\153\113\003\361\002\014\334\253\245 \100\044\000\177\164\224\241\235\010\051\263\210\013\365\207\167 \235\125\315\344\303\176\327\152\144\253\205\024\206\225\133\227 \062\120\157\075\310\272\146\014\343\374\275\270\111\301\166\211 \111\031\375\300\250\275\211\243\147\057\306\237\274\161\031\140  $\label{eq:condition} $$ \270\055\351\054\311\220\166\146\173\224\342\257\170\326\145\123$  $\label{eq:condition} $$ 135\074\326\234\262\317\051\003\371\057\244\120\262\324\110\316$$ \005\062\125\212\375\262\144\114\016\344\230\007\165\333\177\337 \271\010\125\140\205\060\051\371\173\110\244\151\206\343\065\077  $\label{eq:condition} $$ \036\206\135\172\172\025\275\357\000\216\025\042\124\027\000\220$ \046\223\274\016\111\150\221\277\370\107\323\235\225\102\301\016 \115\337\157\046\317\303\030\041\142\146\103\160\326\325\300\007 \341\002\003\001\000\001\243\102\060\100\060\016\006\003\125\035 \017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035  $\label{eq:condition} $$ \023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125$$ \035\016\004\026\004\024\125\344\201\321\021\200\276\330\211\271 \010\243\061\371\241\044\011\026\271\160\060\015\006\011\052\206  $\label{eq:condition} $$ \frac{110}{206}\frac{367}{015}\frac{001}{001}\frac{005}{005}\frac{000}{003}\frac{202}{001}\frac{001}{000}\frac{073}{233} $$$ \217\126\233\060\347\123\231\174\172\171\247\115\227\327\031\225 \220\373\006\037\312\063\174\106\143\217\226\146\044\372\100\033 \041\047\312\346\162\163\362\117\376\061\231\375\310\014\114\150 \123\306\200\202\023\230\372\266\255\332\135\075\361\316\156\366  $\label{eq:condition} $$ \025\021\224\202\014\356\077\225\257\021\253\017\327\057\336\037 $$$ \003\217\127\054\036\311\273\232\032\104\225\353\030\117\246\037 \315\175\127\020\057\233\004\011\132\204\265\156\330\035\072\341  $\label{eq:condition} $$ 326 \times 321 \times 154 \times 171 \times 34 \times 320 \times 343 \times 320 \times 144 \times 223 \times 345 \times 320 \times$ \074\355\337\075\276\246\345\225\032\303\265\031\303\275\136\133 \273\377\043\357\150\031\313\022\223\047\134\003\055\157\060\320 \036\266\032\254\336\132\367\321\252\250\047\246\376\171\201\304 \171\231\063\127\272\022\260\251\340\102\154\223\312\126\336\376 \155\204\013\010\213\176\215\352\327\230\041\306\363\347\074\171 \057\136\234\321\114\025\215\341\354\042\067\314\232\103\013\227  $\label{eq:condition} $\34\200\220\215\263\147\233\157\110\010\025\126\317\277\361\053$ \174\136\232\166\351\131\220\305\174\203\065\021\145\121 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Serial Number: 946069240 (0x3863def8)

<sup>#</sup> Trust for "Entrust.net Premium 2048 Secure Server CA"

# Issuer: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net

Limited,OU=www.entrust.net/CPS\_2048 incorp. by ref. (limits liab.),O=Entrust.net

```
# Subject: CN=Entrust.net Certification Authority (2048),OU=(c) 1999 Entrust.net
Limited, OU=www.entrust.net/CPS 2048 incorp. by ref. (limits liab.), O=Entrust.net
# Not Valid Before: Fri Dec 24 17:50:51 1999
# Not Valid After: Tue Jul 24 14:15:12 2029
# Fingerprint (SHA-256):
6D:C4:71:72:E0:1C:BC:B0:BF:62:58:0D:89:5F:E2:B8:AC:9A:D4:F8:73:80:1E:0C:10:B9:C8:37:D2:1E:B1:77
# Fingerprint (SHA1): 50:30:06:09:1D:97:D4:F5:AE:39:F7:CB:E7:92:7D:7D:65:2D:34:31
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust.net Premium 2048 Secure Server CA"
CKA CERT SHA1 HASH MULTILINE OCTAL
\120\060\006\011\035\227\324\365\256\071\367\313\347\222\175\175
\145\055\064\061
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\356\051\061\274\062\176\232\346\350\265\367\121\264\064\161\220
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\264\061\024\060\022\006\003\125\004\012\023\013\105\156
\164\162\165\163\164\056\156\145\164\061\100\060\076\006\003\125
\label{eq:condition} $$ \004\013\024\067\167\167\167\056\145\156\164\162\165\163\164\056$
\156\145\164\057\103\120\123\137\062\060\064\070\040\151\156\143
\157\162\160\056\040\142\171\040\162\145\146\056\040\050\154\151
\155\151\164\163\040\154\151\141\142\056\051\061\045\060\043\006
\003\125\004\013\023\034\050\143\051\040\061\071\071\071\071\040\105
\145\144\061\063\060\061\006\003\125\004\003\023\052\105\156\164
\162\165\163\164\056\156\145\164\040\103\145\162\164\151\146\151
 \\ 143 \\ 141 \\ 164 \\ 151 \\ 157 \\ 156 \\ 040 \\ 101 \\ 165 \\ 164 \\ 150 \\ 157 \\ 162 \\ 151 \\ 164 \\ 171 \\
\040\050\062\060\064\070\051
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\004\070\143\336\370
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Baltimore CyberTrust Root"
# Issuer: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE
# Serial Number: 33554617 (0x20000b9)
# Subject: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE
# Not Valid Before: Fri May 12 18:46:00 2000
```

# Not Valid After: Mon May 12 23:59:00 2025

# Fingerprint (SHA-256):

16:AF:57:A9:F6:76:B0:AB:12:60:95:AA:5E:BA:DE:F2:2A:B3:11:19:D6:44:AC:95:CD:4B:93:DB:F3:F2:6A:EB

# Fingerprint (SHA1): D4:DE:20:D0:5E:66:FC:53:FE:1A:50:88:2C:78:DB:28:52:CA:E4:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Baltimore CyberTrust Root"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\002\000\000\271

END

### CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\167\060\202\002\137\240\003\002\001\002\002\004\002 \000\000\271\060\015\006\011\052\206\110\206\367\015\001\001\005 \005\000\060\132\061\013\060\011\006\003\125\004\006\023\002\111 \105\061\022\060\020\006\003\125\004\012\023\011\102\141\154\164 \151\155\157\162\145\061\023\060\021\006\003\125\004\013\023\012 \103\171\142\145\162\124\162\165\163\164\061\042\060\040\006\003  $\label{eq:condition} $$ \frac{171}142\\145\\162\\124\\162\\165\\163\\164\\040\\122\\157\\157\\164\\060\\036$ \027\015\060\060\060\065\061\062\061\070\064\066\060\060\132\027 \015\062\065\060\065\061\062\062\063\065\071\060\060\132\060\132 \061\013\060\011\006\003\125\004\006\023\002\111\105\061\022\060 \020\006\003\125\004\012\023\011\102\141\154\164\151\155\157\162 \145\061\023\060\021\006\003\125\004\013\023\012\103\171\142\145 \162\124\162\165\163\164\061\042\060\040\006\003\125\004\003\023 \031\102\141\154\164\151\155\157\162\145\040\103\171\142\145\162 \124\162\165\163\164\040\122\157\157\164\060\202\001\042\060\015 \006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001

\017\000\060\202\001\012\002\202\001\001\000\243\004\273\042\253 \230\075\127\350\046\162\232\265\171\324\051\342\341\350\225\200 \261\260\343\133\216\053\051\232\144\337\241\135\355\260\011\005  $\label{eq:condition} $$ \frac{333}{050} \frac{316}{142} \frac{242}{142} \frac{376}{264} \frac{210}{332} \frac{32}{022} \frac{353}{070} \frac{353}{350}$  $\label{eq:condition} $$ \041\235\300\101\053\001\122\173\210\167\323\034\217\307\272\271 $$$ \210\265\152\011\347\163\350\021\100\247\321\314\312\142\215\055 \345\217\013\246\120\322\250\120\303\050\352\365\253\045\207\212  $\verb|232|226|034|251|147|270|077|014|325|367|371|122|023|057|302|033|$ \325\160\160\360\217\300\022\312\006\313\232\341\331\312\063\172 \167\326\370\354\271\361\150\104\102\110\023\322\300\302\244\256 \136\140\376\266\246\005\374\264\335\007\131\002\324\131\030\230 \143\365\245\143\340\220\014\175\135\262\006\172\363\205\352\353 \324\003\256\136\204\076\137\377\025\355\151\274\371\071\066\162  $\label{eq:condition} $$ \037\044\230\041\134\007\231\051\275\306\072\354\347\156\206\072$ \153\227\164\143\063\275\150\030\061\360\170\215\166\277\374\236 \216\135\052\206\247\115\220\334\047\032\071\002\003\001\000\001 \243\105\060\103\060\035\006\003\125\035\016\004\026\004\024\345 \235\131\060\202\107\130\314\254\372\010\124\066\206\173\072\265  $\label{eq:condition} $$ \004\115\360\060\022\006\003\125\035\023\001\001\377\004\010\060 $$$ \006\001\001\377\002\001\003\060\016\006\003\125\035\017\001\001 \377\004\004\003\002\001\006\060\015\006\011\052\206\110\206\367 \157\121\150\102\005\240\335\273\117\047\045\204\003\275\367\144  $\label{eq:condition} $$ 375\055\327\060\343\244\020\027\353\332\051\051\266\171\077\166 $$$ \366\031\023\043\270\020\012\371\130\244\324\141\160\275\004\141 \152\022\212\027\325\012\275\305\274\060\174\326\351\014\045\215  $\label{eq:condition} $$ \206\100\117\354\314\243\176\070\306\067\021\117\355\335\150\061 $$$ \216\114\322\263\001\164\356\276\165\136\007\110\032\177\160\377 \026\134\204\300\171\205\270\005\375\177\276\145\021\243\017\300  $\label{eq:condition} $$ \002\264\370\122\067\071\004\325\251\061\172\030\277\240\052\364$ \022\231\367\243\105\202\343\074\136\365\235\236\265\310\236\174 \056\310\244\236\116\010\024\113\155\375\160\155\153\032\143\275 \144\346\037\267\316\360\362\237\056\273\033\267\362\120\210\163 \222\302\342\343\026\215\232\062\002\253\216\030\335\351\020\021 \356\176\065\253\220\257\076\060\224\172\320\063\075\247\145\017 \365\374\216\236\142\317\107\104\054\001\135\273\035\265\062\322 \107\322\070\056\320\376\201\334\062\152\036\265\356\074\325\374 \347\201\035\031\303\044\102\352\143\071\251

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Baltimore CyberTrust Root"

<sup>#</sup> Issuer: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE

<sup>#</sup> Serial Number: 33554617 (0x20000b9)

<sup>#</sup> Subject: CN=Baltimore CyberTrust Root,OU=CyberTrust,O=Baltimore,C=IE

```
# Fingerprint (SHA-256):
16:AF:57:A9:F6:76:B0:AB:12:60:95:AA:5E:BA:DE:F2:2A:B3:11:19:D6:44:AC:95:CD:4B:93:DB:F3:F2:6A:EB
# Fingerprint (SHA1): D4:DE:20:D0:5E:66:FC:53:FE:1A:50:88:2C:78:DB:28:52:CA:E4:74
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Baltimore CyberTrust Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\label{eq:condition} $\324\336\040\320\136\146\374\123\376\032\120\210\054\170\333\050$
\122\312\344\164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\254\266\224\245\234\027\340\327\221\122\233\261\227\006\246\344
END
CKA ISSUER MULTILINE OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\111\105\061
\label{eq:condition} $$ \022\060\020\006\003\125\004\012\023\011\102\141\154\164\151\155$
\157\162\145\061\023\060\021\006\003\125\004\013\023\012\103\171
\142\145\162\124\162\165\163\164\061\042\060\040\006\003\125\004
\label{eq:condition} $$ \03\023\031\102\141\154\164\151\155\157\162\145\040\103\171\142
\145\162\124\162\165\163\164\040\122\157\157\164
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\004\002\000\000\271
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Entrust Root Certification Authority"
# Issuer: CN=Entrust Root Certification Authority, OU="(c) 2006 Entrust, Inc.", OU=www.entrust.net/CPS is
incorporated by reference,O="Entrust, Inc.",C=US
# Serial Number: 1164660820 (0x456b5054)
# Subject: CN=Entrust Root Certification Authority, OU="(c) 2006 Entrust, Inc.", OU=www.entrust.net/CPS is
incorporated by reference,O="Entrust, Inc.",C=US
# Not Valid Before: Mon Nov 27 20:23:42 2006
# Not Valid After: Fri Nov 27 20:53:42 2026
# Fingerprint (SHA-256):
73:C1:76:43:4F:1B:C6:D5:AD:F4:5B:0E:76:E7:27:28:7C:8D:E5:76:16:C1:E6:E6:14:1A:2B:2C:BC:7D:8E:4C
# Fingerprint (SHA1): B3:1E:B1:B7:40:E3:6C:84:02:DA:DC:37:D4:4D:F5:D4:67:49:52:F9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
```

# Not Valid Before: Fri May 12 18:46:00 2000 # Not Valid After : Mon May 12 23:59:00 2025 CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA SUBJECT MULTILINE OCTAL

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\105\153\120\124

**END** 

# CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \000\202\004\221\060\202\003\171\240\003\002\001\002\002\004\105 $$ \153\120\124\060\015\006\011\052\206\110\206\367\015\001\001\005 $$ \005\000\060\201\260\061\013\060\011\006\003\125\004\0015\156\164 $$ \162\165\163\164\054\040\111\156\143\156\164\162\165\163\164 $$ \056\156\145\164\057\103\120\123\040\151\163\040\151\156\143\157 $$ \162\145\156\143\145\144\040\142\171\040\162\145\146\145 $$ \162\145\156\143\145\061\037\060\035\006\003\125\004\013\023\026 $$ \050\143\051\040\062\060\066\040\105\156\164\162\165\163\164 $$ \054\040\111\156\143\056\061\055\060\053\006\003\125\004\003\023\023 $$$ 

\044\105\156\164\162\165\163\164\040\122\157\157\164\040\103\145 \162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150 \157\162\151\164\171\060\036\027\015\060\066\061\061\062\067\062 \060\062\063\064\062\132\027\015\062\066\061\061\062\067\062\060 \065\063\064\062\132\060\201\260\061\013\060\011\006\003\125\004 \006\023\002\125\123\061\026\060\024\006\003\125\004\012\023\015 \105\156\164\162\165\163\164\054\040\111\156\143\056\061\071\060 \067\006\003\125\004\013\023\060\167\167\167\056\145\156\164\162 \156\143\157\162\160\157\162\141\164\145\144\040\142\171\040\162 \145\146\145\162\145\156\143\145\061\037\060\035\006\003\125\004  $\label{eq:condition} $$ \023\026\050\143\051\040\062\060\066\040\105\156\164\162 $$$ \165\163\164\054\040\111\156\143\056\061\055\060\053\006\003\125 \004\003\023\044\105\156\164\162\165\163\164\040\122\157\157\164  $\\ \\ 040\\ \\ 103\\ \\ 145\\ \\ 162\\ \\ 164\\ \\ 151\\ \\ 146\\ \\ 151\\ \\ 143\\ \\ 141\\ \\ 164\\ \\ 151\\ \\ 157\\ \\ 156\\ \\ 040\\ \\ 101$ \165\164\150\157\162\151\164\171\060\202\001\042\060\015\006\011  $\label{eq:condition} $$ \052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000 $$$ \060\202\001\012\002\202\001\001\000\266\225\266\103\102\372\306 \155\052\157\110\337\224\114\071\127\005\356\303\171\021\101\150  $\label{eq:condition} $$ \066\355\354\376\232\001\217\241\070\050\374\367\020\106\146\056$$$ \115\036\032\261\032\116\306\321\300\225\210\260\311\377\061\213 \063\003\333\267\203\173\076\040\204\136\355\262\126\050\247\370  $\label{eq:condition} $$ 340\271\100\161\067\305\313\107\016\227\052\150\300\042\225\142 $$$ \025\333\107\331\365\320\053\377\202\113\311\255\076\336\114\333 \220\200\120\077\011\212\204\000\354\060\012\075\030\315\373\375 \052\131\232\043\225\027\054\105\236\037\156\103\171\155\014\134 \230\376\110\247\305\043\107\134\136\375\156\347\036\264\366\150  $\label{eq:condition} $$ 105\321\206\203\133\242\212\215\261\343\051\200\376\045\161\210 $$$ \255\276\274\217\254\122\226\113\252\121\215\344\023\061\031\350 \116\115\237\333\254\263\152\325\274\071\124\161\312\172\177  $\label{eq:condition} $$ \220\335\175\035\200\331\201\273\131\046\302\021\376\346\223\342 $$$ \367\200\344\145\373\064\067\016\051\200\160\115\257\070\206\056 \236\177\127\257\236\027\256\353\034\313\050\041\137\266\034\330 \347\242\004\042\371\323\332\330\313\002\003\001\000\001\243\201 \260\060\201\255\060\016\006\003\125\035\017\001\001\377\004\004 \003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005 \060\003\001\001\377\060\053\006\003\125\035\020\004\044\060\042 \200\017\062\060\060\066\061\061\062\067\062\060\062\063\064\062 \132\201\017\062\060\062\066\061\061\062\067\062\060\065\063\064 \062\132\060\037\006\003\125\035\043\004\030\060\026\200\024\150 \220\344\147\244\246\123\200\307\206\146\244\361\367\113\103\373 \204\275\155\060\035\006\003\125\035\016\004\026\004\024\150\220 \344\147\244\246\123\200\307\206\146\244\361\367\113\103\373\204 \275\155\060\035\006\011\052\206\110\206\366\175\007\101\000\004 \020\060\016\033\010\126\067\056\061\072\064\056\060\003\002\004 \220\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  $\label{eq:condition} $$ 350 \times 221 \times 0.040 \times 0.040 \times 0.031 \times$ 

 $\label{eq:control_control_control_control_control} $$ \226\373\124\132\031\054\014\010\367\262\274\205\250\235\177\155\073\122\263\052\333\347\324\204\214\143\366\017\313\046\001\221\120\154\364\137\024\342\223\164\300\023\236\060\072\120\343\264\140\305\034\360\042\104\215\161\107\254\310\032\311\351\233\232\200\140\023\377\160\176\137\021\115\111\033\263\025\122\173\311\124\332\277\235\225\257\153\232\330\236\351\361\344\103\215\342\201\104\072\277\257\275\203\102\163\122\213\252\273\247\051\317\235\2261\355\060\045\301\204\332\064\322\133\170\203\126\354\234\066\303\046\342\021\366\147\111\035\222\253\214\373\353\377\172\356\205\112\247\120\200\360\247\134\112\224\056\137\005\231\271\40\073\363\132\264\264\173\256\332\013\220\070\165\357\201\035\146\322\367\127\160\066\263\277\374\050\257\161\045\205\133\023\376\036\177\132\264\074$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Entrust Root Certification Authority"
- # Issuer: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is incorporated by reference,O="Entrust, Inc.",C=US
- # Serial Number: 1164660820 (0x456b5054)
- # Subject: CN=Entrust Root Certification Authority,OU="(c) 2006 Entrust, Inc.",OU=www.entrust.net/CPS is incorporated by reference,O="Entrust, Inc.",C=US
- # Not Valid Before: Mon Nov 27 20:23:42 2006
- # Not Valid After: Fri Nov 27 20:53:42 2026
- # Fingerprint (SHA-256):
- 73:C1:76:43:4F:1B:C6:D5:AD:F4:5B:0E:76:E7:27:28:7C:8D:E5:76:16:C1:E6:E6:14:1A:2B:2C:BC:7D:8E:4C
- # Fingerprint (SHA1): B3:1E:B1:B7:40:E3:6C:84:02:DA:DC:37:D4:4D:F5:D4:67:49:52:F9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \263\036\261\267\100\343\154\204\002\332\334\067\324\115\365\324$$ 

\147\111\122\371

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 326\245\303\355\135\335\076\000\301\075\207\222\037\035\077\344 $$$ 

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\260\061\013\060\011\006\003\125\004\006\023\002\125\123 \061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165 \163\164\054\040\111\156\143\056\061\071\060\067\006\003\125\004 \013\023\060\167\167\167\167\056\145\156\164\162\165\163\164\056\156

\145\164\057\103\120\123\040\151\163\040\151\156\143\157\162\160 \157\162\141\164\145\144\040\142\171\040\162\145\146\145\162\145 \156\143\145\061\037\060\035\006\003\125\004\013\023\026\050\143  $\label{eq:condition} $$ \051\040\062\060\066\040\105\156\164\162\165\163\164\054\040 $$$ \111\156\143\056\061\055\060\053\006\003\125\004\003\023\044\105 \156\164\162\165\163\164\040\122\157\157\164\040\103\145\162\164 \151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162 \151\164\171 **END** CKA SERIAL NUMBER MULTILINE OCTAL  $002\004\105\153\120\124$ **END** CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE # # Certificate "Certum Root CA" # Issuer: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL # Serial Number: 65568 (0x10020) # Subject: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL # Not Valid Before: Tue Jun 11 10:46:39 2002 # Not Valid After: Fri Jun 11 10:46:39 2027 # Fingerprint (SHA-256): D8:E0:FE:BC:1D:B2:E3:8D:00:94:0F:37:D2:7D:41:34:4D:99:3E:73:4B:99:D5:65:6D:97:78:D4:D8:14:36:24 # Fingerprint (SHA1): 62:52:DC:40:F7:11:43:A2:2F:DE:9E:F7:34:8E:06:42:51:B1:81:18 CKA CLASS CK OBJECT CLASS CKO CERTIFICATE CKA TOKEN CK BBOOL CK TRUE CKA\_PRIVATE CK\_BBOOL CK\_FALSE CKA MODIFIABLE CK BBOOL CK FALSE CKA LABEL UTF8 "Certum Root CA" CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509 CKA SUBJECT MULTILINE OCTAL \060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061 \033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164 \157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020 **END** CKA\_ID UTF8 "0" CKA ISSUER MULTILINE OCTAL \060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061 \033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164 \157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020 \006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101 **END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

**END** 

### CKA VALUE MULTILINE OCTAL

\060\202\003\014\060\202\001\364\240\003\002\001\002\002\003\001 \000\040\060\015\006\011\052\206\110\206\367\015\001\001\005\005 \000\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114 \061\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145 \164\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060  $\label{eq:condition} $$ \020\006\003\125\004\003\023\011\103\145\162\164\165\155\040\103$ \101\060\036\027\015\060\062\060\066\061\061\061\060\064\066\063 \071\132\027\015\062\067\060\066\061\061\061\060\064\066\063\071 \132\060\076\061\013\060\011\006\003\125\004\006\023\002\120\114 \061\033\060\031\006\003\125\004\012\023\022\125\156\151\172\145  $\label{eq:condition} $$ 164\157\040\123\160\056\040\172\040\157\056\157\056\061\022\060 $$$  $\label{eq:condition} $$ \000\003\125\004\003\023\011\103\145\162\164\165\155\040\103$ \101\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001  $\label{eq:condition} $$ \001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001$ \001\000\316\261\301\056\323\117\174\315\045\316\030\076\117\304 \214\157\200\152\163\310\133\121\370\233\322\334\273\000\134\261 \240\374\165\003\356\201\360\210\356\043\122\351\346\025\063\215 \254\055\011\305\166\371\053\071\200\211\344\227\113\220\245\250 \170\370\163\103\173\244\141\260\330\130\314\341\154\146\176\234 \363\011\136\125\143\204\325\250\357\363\261\056\060\150\263\304 \074\330\254\156\215\231\132\220\116\064\334\066\232\217\201\210 \120\267\155\226\102\011\363\327\225\203\015\101\113\260\152\153 \370\374\017\176\142\237\147\304\355\046\137\020\046\017\010\117 \360\244\127\050\316\217\270\355\105\366\156\356\045\135\252\156  $\label{eq:condition} $$ \071\276\344\223\057\331\107\240\162\353\372\246\133\257\312\123$ \077\342\016\306\226\126\021\156\367\351\146\251\046\330\177\225 \123\355\012\205\210\272\117\051\245\102\214\136\266\374\205\040  $\label{eq:condition} $$ \000\252\150\013\241\032\205\001\234\304\106\143\202\210\266\042 $$$ \261\356\376\252\106\131\176\317\065\054\325\266\332\135\367\110 \063\024\124\266\353\331\157\316\315\210\326\253\033\332\226\073 \035\131\002\003\001\000\001\243\023\060\021\060\017\006\003\125 \035\023\001\001\377\004\005\060\003\001\001\377\060\015\006\011 \052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000 \270\215\316\357\347\024\272\317\356\260\104\222\154\264\071\076  $\label{eq:condition} $$ \242\204\156\255\270\041\167\322\324\167\202\207\346\040\101\201 $$$ \356\342\370\021\267\143\321\027\067\276\031\166\044\034\004\032 \114\353\075\252\147\157\055\324\315\376\145\061\160\305\033\246 \002\012\272\140\173\155\130\302\232\111\376\143\062\013\153\343 \072\300\254\253\073\260\350\323\011\121\214\020\203\306\064\340  $\label{eq:condition} $$ 305\053\340\032\266\140\024\047\154\062\167\214\274\262\162\230 $$$ \317\315\314\077\271\310\044\102\024\326\127\374\346\046\103\251  $\label{eq:condition} $$ \035\345\200\220\316\003\124\050\076\367\077\323\370\115\355\152$$ \012\072\223\023\233\073\024\043\023\143\234\077\321\207\047\171 \345\114\121\343\001\255\205\135\032\073\261\325\163\020\244\323 \362\274\156\144\365\132\126\220\250\307\016\114\164\017\056\161

\073\367\310\107\364\151\157\025\362\021\136\203\036\234\174\122 \256\375\002\332\022\250\131\147\030\333\274\160\335\233\261\151 \355\200\316\211\100\110\152\016\065\312\051\146\025\041\224\054 \350\140\052\233\205\112\100\363\153\212\044\354\006\026\054\163 **END** CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA NSS SERVER DISTRUST AFTER CK BBOOL CK FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE # Trust for "Certum Root CA" # Issuer: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL # Serial Number: 65568 (0x10020) # Subject: CN=Certum CA,O=Unizeto Sp. z o.o.,C=PL # Not Valid Before: Tue Jun 11 10:46:39 2002 # Not Valid After: Fri Jun 11 10:46:39 2027 # Fingerprint (SHA-256): D8:E0:FE:BC:1D:B2:E3:8D:00:94:0F:37:D2:7D:41:34:4D:99:3E:73:4B:99:D5:65:6D:97:78:D4:D8:14:36:24 # Fingerprint (SHA1): 62:52:DC:40:F7:11:43:A2:2F:DE:9E:F7:34:8E:06:42:51:B1:81:18 CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA PRIVATE CK BBOOL CK FALSE CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE CKA\_LABEL UTF8 "Certum Root CA" CKA CERT SHA1 HASH MULTILINE OCTAL \142\122\334\100\367\021\103\242\057\336\236\367\064\216\006\102 \121\261\201\030 **END** CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL \054\217\237\146\035\030\220\261\107\046\235\216\206\202\214\251 **END** CKA\_ISSUER MULTILINE\_OCTAL \060\076\061\013\060\011\006\003\125\004\006\023\002\120\114\061 \033\060\031\006\003\125\004\012\023\022\125\156\151\172\145\164 \157\040\123\160\056\040\172\040\157\056\157\056\061\022\060\020  $\label{eq:condition} $$ \006\003\125\004\003\023\011\103\145\162\164\165\155\040\103\101$ **END** CKA SERIAL NUMBER MULTILINE OCTAL \002\003\001\000\040 **END** CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE # Certificate "Comodo AAA Services root"

,, **T** 

#

# Issuer: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB

- # Serial Number: 1 (0x1)
- # Subject: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB
- # Not Valid Before: Thu Jan 01 00:00:00 2004
- # Not Valid After: Sun Dec 31 23:59:59 2028
- # Fingerprint (SHA-256):

D7:A7:A0:FB:5D:7E:27:31:D7:71:E9:48:4E:BC:DE:F7:1D:5F:0C:3E:0A:29:48:78:2B:C8:3E:E0:EA:69:9E:F4

# Fingerprint (SHA1): D1:EB:23:A4:6D:17:D6:8F:D9:25:64:C2:F1:F1:60:17:64:D8:E3:49

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Comodo AAA Services root"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\173\061\013\060\011\006\003\125\004\006\023\002\107\102\061 $$$ 

 $\label{eq:condition} $$ \033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145$ 

\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060\016

 $\label{eq:condition} $$ \006\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032$$$ 

 $\label{eq:condition} $$ \000\000\000\125\004\012\014\021\103\157\155\157\144\157\040 $$$ 

\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003

 $\\143\\141\\164\\145\\040\\123\\145\\162\\166\\151\\143\\145\\163$ 

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\173\061\013\060\011\006\003\125\004\000\0023\002\107\102\061\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145\162\060\003\125\004\007\014\007\123\141\154\146\157\162\144\061\032\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003\125\004\003\101\101\101\101\103\145\162\164\151\146\151\146\151\146\151\146\151\146\163$ 

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\070\061\062\063\061\062\063\065\071\065\071\132\060\173\061\013 \060\011\006\003\125\004\006\023\002\107\102\061\033\060\031\006 \003\125\004\010\014\022\107\162\145\141\164\145\162\040\115\141 \156\143\150\145\163\164\145\162\061\020\060\016\006\003\125\004 \007\014\007\123\141\154\146\157\162\144\061\032\060\030\006\003 \125\004\012\014\021\103\157\155\157\144\157\040\103\101\040\114 \151\155\151\164\145\144\061\041\060\037\006\003\125\004\003\014  $\label{eq:condition} $$ \030\101\101\101\040\103\145\162\164\151\146\151\143\141\164\145$$ \040\123\145\162\166\151\143\145\163\060\202\001\042\060\015\006 \011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017  $\label{eq:condition} $$ \000\060\202\001\012\002\202\001\001\000\276\100\235\364\156\341 $$$ \352\166\207\034\115\105\104\216\276\106\310\203\006\235\301\052  $\label{eq:condition} $$ \376\030\037\216\344\002\372\363\253\135\120\212\026\061\013\232$  $\label{eq:condition} $$ \006\320\305\160\042\315\111\055\124\143\314\266\156\150\106\013$ \123\352\313\114\044\300\274\162\116\352\361\025\256\364\124\232 \022\012\303\172\262\063\140\342\332\211\125\363\042\130\363\336 \334\317\357\203\206\242\214\224\117\237\150\362\230\220\106\204 \047\307\166\277\343\314\065\054\213\136\007\144\145\202\300\110  $\label{eq:condition} $$ \260\250\221\371\141\237\166\040\120\250\221\307\146\265\353\170$$ \142\003\126\360\212\032\023\352\061\243\036\240\231\375\070\366 \366\047\062\130\157\007\365\153\270\373\024\053\257\267\252\314  $\label{eq:condition} $$ 326\143\137\163\214\332\005\231\250\070\250\313\027\170\066\121 $$$ \254\351\236\364\170\072\215\317\017\331\102\342\230\014\253\057 \237\016\001\336\357\237\231\111\361\055\337\254\164\115\033\230 \265\107\305\345\051\321\371\220\030\307\142\234\276\203\307\046 \173\076\212\045\307\300\335\235\346\065\150\020\040\235\217\330 \336\322\303\204\234\015\136\350\057\311\002\003\001\000\001\243 \201\300\060\201\275\060\035\006\003\125\035\016\004\026\004\024 \240\021\012\043\076\226\361\007\354\342\257\051\357\202\245\177  $\label{eq:condition} $$ 320 060 244 264 060 016 006 003 125 035 017 001 001 377 004 004$ \003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005 \060\003\001\001\377\060\173\006\003\125\035\037\004\164\060\162 \060\070\240\066\240\064\206\062\150\164\164\160\072\057\057\143 \162\154\056\143\157\155\157\144\157\143\141\056\143\157\155\057 \101\101\101\103\145\162\164\151\146\151\143\141\164\145\123\145 \162\166\151\143\145\163\056\143\162\154\060\066\240\064\240\062  $\label{eq:condition} $$ \206\060\150\164\164\160\072\057\057\143\162\154\056\143\157\155$$ \146\151\143\141\164\145\123\145\162\166\151\143\145\163\056\143 \162\154\060\015\006\011\052\206\110\206\367\015\001\001\005\005 \000\003\202\001\001\000\010\126\374\002\360\233\350\377\244\372 \326\173\306\104\200\316\117\304\305\366\000\130\314\246\266\274 \024\111\150\004\166\350\346\356\135\354\002\017\140\326\215\120 \030\117\046\116\001\343\346\260\245\356\277\274\164\124\101\277 \375\374\022\270\307\117\132\364\211\140\005\177\140\267\005\112 \363\366\361\302\277\304\271\164\206\266\055\175\153\314\322\363 \106\335\057\306\340\152\303\303\064\003\054\175\226\335\132\302  $\label{eq:control_control_control_control_control} $$ 016\247\012\231\301\005\213\253\014\057\363\134\072\317\154\067\125\011\207\336\123\100\154\130\357\374\266\253\145\156\0004\366\0033\334\074\340\132\025\306\236\331\361\131\110\060\041\145\003\154\354\351\041\163\354\233\003\241\340\067\255\240\025\030\217\372\272\002\316\247\054\251\020\023\054\324\345\010\046\253\042\227\140\370\220\136\164\324\242\232\123\275\362\251\150\340\242\156\302\327\154\261\243\017\236\277\353\150\347\126\362\256\362\243\305\3070\072\011\201\265\153\205\327\276\055\355\077\032\267\262\143\342\365\142\054\202\324\152\000\101\120\361\071\203\237\225\351\066\226\230\156$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Comodo AAA Services root"
- # Issuer: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB
- # Serial Number: 1 (0x1)
- # Subject: CN=AAA Certificate Services,O=Comodo CA Limited,L=Salford,ST=Greater Manchester,C=GB
- # Not Valid Before: Thu Jan 01 00:00:00 2004
- # Not Valid After: Sun Dec 31 23:59:59 2028
- # Fingerprint (SHA-256):
- D7:A7:A0:FB:5D:7E:27:31:D7:71:E9:48:4E:BC:DE:F7:1D:5F:0C:3E:0A:29:48:78:2B:C8:3E:E0:EA:69:9E:F4
- # Fingerprint (SHA1): D1:EB:23:A4:6D:17:D6:8F:D9:25:64:C2:F1:F1:60:17:64:D8:E3:49
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA TOKEN CK BBOOL CK TRUE
- CKA PRIVATE CK BBOOL CK FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA LABEL UTF8 "Comodo AAA Services root"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL
- \321\353\043\244\155\027\326\217\331\045\144\302\361\361\140\027 \144\330\343\111

**END** 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$111\171\004\260\353\207\031\254\107\260\274\021\121\233\164\320$$ 

CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \00173\061\013\060\011\006\003\125\004\000\023\002\107\102\061\033\060\031\006\003\125\004\010\014\022\107\162\145\141\164\145\162\061\020\060\016\006\003\125\004\007\123\141\154\146\157\162\144\061\032\060\030\006\003\125\004\012\014\021\103\157\155\157\144\157\040\103\101\040\114\151\155\151\164\145\144\061\041\060\037\006\003\125\004\003\014\030\101\101\101\040\103\145\162\164\151\146\151\146\151\146\151\146\153\143\145\163$ 

END

 ${\sf CKA\_SERIAL\_NUMBER\ MULTILINE\_OCTAL}$ 

\002\001\001

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "QuoVadis Root CA 2"

#

# Issuer: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM

# Serial Number: 1289 (0x509)

# Subject: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM

# Not Valid Before: Fri Nov 24 18:27:00 2006 # Not Valid After : Mon Nov 24 18:23:33 2031

# Fingerprint (SHA-256):

85:A0:DD:7D:D7:20:AD:B7:FF:05:F8:3D:54:2B:20:9D:C7:FF:45:28:F7:D6:77:B1:83:89:FE:A5:E5:C4:9E:86

# Fingerprint (SHA1): CA:3A:FB:CF:12:40:36:4B:44:B2:16:20:88:80:48:39:19:93:7C:F7

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "QuoVadis Root CA 2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\157\164\040\103\101\040\062

END

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\verb|\langle002|\langle002|\langle005|\langle011|$ 

**END** 

CKA\_VALUE MULTILINE\_OCTAL

\157\164\040\103\101\040\062\060\036\027\015\060\066\061\061\062 \064\061\070\062\067\060\060\132\027\015\063\061\061\061\062\064 \061\070\062\063\063\063\132\060\105\061\013\060\011\006\003\125 \004\006\023\002\102\115\061\031\060\027\006\003\125\004\012\023 \020\121\165\157\126\141\144\151\163\040\114\151\155\151\164\145 \141\144\151\163\040\122\157\157\164\040\103\101\040\062\060\202 \002\042\060\015\006\011\052\206\110\206\367\015\001\001\005  $\label{eq:condition} $$ \000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\232 $$$ \030\312\113\224\015\000\055\257\003\051\212\360\017\201\310\256 \114\031\205\035\010\237\253\051\104\205\363\057\201\255\062\036  $\label{eq:condition} $$ \220\106\277\243\206\046\032\036\376\176\034\030\072\134\234\140 $$$ \027\052\072\164\203\063\060\175\141\124\021\313\355\253\340\346  $\label{eq:condition} $$ \frac{322}{242}176\\365\\153\\157\\030\\267\\012\\013\\055\\375\\351\\076\\357\\012$ \306\263\020\351\334\302\106\027\370\135\375\244\332\377\236\111 \132\234\346\063\346\044\226\367\077\272\133\053\034\172\065\302 \326\147\376\253\146\120\213\155\050\140\053\357\327\140\303\307 \223\274\215\066\221\363\177\370\333\021\023\304\234\167\166\301 \256\267\002\152\201\172\251\105\203\342\005\346\271\126\301\224  $\\ \\067\\\\217\\\\110\\\\161\\\\143\\\\042\\\\354\\\\027\\\\145\\\\007\\\\225\\\\212\\\\113\\\\337\\\\217\\\\306$ \132\012\345\260\343\137\136\153\021\253\014\371\205\353\104\351 \370\004\163\362\351\376\134\230\214\365\163\257\153\264\176\315 \324\134\002\053\114\071\341\262\225\225\055\102\207\327\325\263 \220\103\267\154\023\361\336\335\366\304\370\211\077\321\165\365 \222\303\221\325\212\210\320\220\354\334\155\336\211\302\145\161 \226\213\015\003\375\234\277\133\026\254\222\333\352\376\171\174 \255\353\257\367\026\313\333\315\045\053\345\037\373\232\237\342 \121\314\072\123\014\110\346\016\275\311\264\166\006\122\346\021 \023\205\162\143\003\004\340\004\066\053\040\031\002\350\164\247 \037\266\311\126\146\360\165\045\334\147\301\016\141\140\210\263  $\label{eq:condition} $$ \076\321\250\374\243\332\035\260\321\261\043\124\337\104\166\155$$ \355\101\330\301\262\042\266\123\034\337\065\035\334\241\167\052 \061\344\055\365\345\345\333\310\340\377\345\200\327\013\143\240 \377\063\241\017\272\054\025\025\352\227\263\322\242\265\276\362 \214\226\036\032\217\035\154\244\141\067\271\206\163\063\327\227 \226\236\043\175\202\244\114\201\342\241\321\272\147\137\225\007 \243\047\021\356\026\020\173\274\105\112\114\262\004\322\253\357  $\label{eq:condition} $$ 325\375\014\121\316\120\152\010\061\371\221\332\014\217\144\134$  $\label{eq:condition} $$ \03\303\072\213\040\077\156\215\147\075\072\326\376\175\133\210 $$$ \311\136\373\314\141\334\213\063\167\323\104\062\065\011\142\004 \222\026\020\330\236\047\107\373\073\041\343\370\353\035\133\002 \003\001\000\001\243\201\260\060\201\255\060\017\006\003\125\035 \023\001\001\377\004\005\060\003\001\001\377\060\013\006\003\125 \035\017\004\004\003\002\001\006\060\035\006\003\125\035\016\004 \026\004\024\032\204\142\274\110\114\063\045\004\324\356\320\366 \003\304\031\106\321\224\153\060\156\006\003\125\035\043\004\147 \060\145\200\024\032\204\142\274\110\114\063\045\004\324\356\320 \366\003\304\031\106\321\224\153\241\111\244\107\060\105\061\013

\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006 \003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114 \151\155\151\164\145\144\061\033\060\031\006\003\125\004\003\023  $\label{eq:condition} $$ \022\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103$ \101\040\062\202\002\005\011\060\015\006\011\052\206\110\206\367  $\label{eq:condition} $$ \001\001\005\005\000\003\202\002\001\000\076\012\026\115\237 $$$ \006\133\250\256\161\135\057\005\057\147\346\023\105\203\304\066 \366\363\300\046\014\015\265\107\144\135\370\264\162\311\106\245 \203\370\215\374\007\270\332\137\115\056\147\262\204\375\331\104 \374\167\120\201\346\174\264\311\015\013\162\123\370\166\007\007  $\label{eq:condition} $$ 101\107\226\014\373\340\202\046\223\125\214\376\042\037\140\145$$ \174\137\347\046\263\367\062\220\230\120\324\067\161\125\366\222  $\label{eq:condition} $$ \041\170\367\225\171\372\370\055\046\207\146\126\060\167\246\067 $$$  $\label{eq:condition} $$ \frac{170\,063\,122\,020\,130\,256\,077\,141\,216\,362\,152\,261\,357\,030\,176\,112}{170\,063\,122\,020\,130\,256\,077\,141\,216\,362\,152\,261\,357\,030\,176\,112}$ \131\143\312\215\242\126\325\247\057\274\126\037\317\071\301\342  $\label{eq:condition} $$ 373\012\250\025\054\175\115\172\143\306\154\227\104\074\322\157 $$$ \303\112\027\012\370\220\322\127\242\031\121\245\055\227\101\332 \007\117\251\120\332\220\215\224\106\341\076\360\224\375\020\000  $\label{eq:condition} $$ \070\365\073\350\100\341\264\156\126\032\040\314\157\130\215\355 $$$ \056\105\217\326\351\223\077\347\261\054\337\072\326\042\214\334 \204\273\042\157\320\370\344\306\071\351\004\210\074\303\272\353  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \375\322\157\361\167\150\015\065\144\043\254\270\125\241\003\321 \115\102\031\334\370\165\131\126\243\371\250\111\171\370\257\016 \271\021\240\174\267\152\355\064\320\266\046\142\070\032\207\014 \370\350\375\056\323\220\177\007\221\052\035\326\176\134\205\203 \231\260\070\010\077\351\136\371\065\007\344\311\142\156\127\177 \247\120\225\367\272\310\233\346\216\242\001\305\326\146\277\171 \141\363\074\034\341\271\202\134\135\240\303\351\330\110\275\031 \242\021\024\031\156\262\206\033\150\076\110\067\032\210\267\135 \226\136\234\307\357\047\142\010\342\221\031\134\322\361\041\335 \272\027\102\202\227\161\201\123\061\251\237\366\175\142\277\162 \341\243\223\035\314\212\046\132\011\070\320\316\327\015\200\026 \264\170\245\072\207\114\215\212\245\325\106\227\362\054\020\271 \274\124\042\300\001\120\151\103\236\364\262\357\155\370\354\332 \361\343\261\357\337\221\217\124\052\013\045\301\046\031\304\122  $\label{eq:condition} $$ \020\05\145\325\202\020\352\302\061\315\056$$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "QuoVadis Root CA 2"

<sup>#</sup> Issuer: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM

<sup>#</sup> Serial Number: 1289 (0x509)

<sup>#</sup> Subject: CN=QuoVadis Root CA 2,O=QuoVadis Limited,C=BM

<sup>#</sup> Not Valid Before: Fri Nov 24 18:27:00 2006

```
# Fingerprint (SHA-256):
85:A0:DD:7D:D7:20:AD:B7:FF:05:F8:3D:54:2B:20:9D:C7:FF:45:28:F7:D6:77:B1:83:89:FE:A5:E5:C4:9E:86
# Fingerprint (SHA1): CA:3A:FB:CF:12:40:36:4B:44:B2:16:20:88:80:48:39:19:93:7C:F7
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 2"
CKA CERT SHA1 HASH MULTILINE OCTAL
\label{eq:condition} $$ \frac{312}072\frac{373}{317}022\frac{00066}{113}\frac{104}{262}026\frac{040}{210}200\frac{110}{071} $$
\031\223\174\367
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\label{eq:condition} $$ 136\071\173\335\370\272\354\202\351\254\142\272\014\124\000\053
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\062
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\002\005\011
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "QuoVadis Root CA 3"
# Issuer: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM
# Serial Number: 1478 (0x5c6)
# Subject: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM
# Not Valid Before: Fri Nov 24 19:11:23 2006
# Not Valid After: Mon Nov 24 19:06:44 2031
# Fingerprint (SHA-256):
18:F1:FC:7F:20:5D:F8:AD:DD:EB:7F:E0:07:DD:57:E3:AF:37:5A:9C:4D:8D:73:54:6B:F4:F1:FE:D1:E1:8D:35
# Fingerprint (SHA1): 1F:49:14:F7:D8:74:95:1D:DD:AE:02:C0:BE:FD:3A:2D:82:75:51:85
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "QuoVadis Root CA 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

# Not Valid After: Mon Nov 24 18:23:33 2031

#### CKA SUBJECT MULTILINE OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061 \031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144 \151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003 \125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157 \157\164\040\103\101\040\063

**END** 

CKA ID UTF8 "0"

#### CKA\_ISSUER MULTILINE\_OCTAL

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

\002\002\005\306

**END** 

### CKA VALUE MULTILINE OCTAL

\060\202\006\235\060\202\004\205\240\003\002\001\002\002\002\005 \306\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000 \060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061  $\label{eq:condition} $$ \031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144$ \151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003 \157\164\040\103\101\040\063\060\036\027\015\060\066\061\061\062 \064\061\071\061\061\062\063\132\027\015\063\061\061\061\062\064 \061\071\060\066\064\064\132\060\105\061\013\060\011\006\003\125 \004\006\023\002\102\115\061\031\060\027\006\003\125\004\012\023 \020\121\165\157\126\141\144\151\163\040\114\151\155\151\164\145 \141\144\151\163\040\122\157\157\164\040\103\101\040\063\060\202 \002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005 \000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\314 \127\102\026\124\234\346\230\323\323\115\356\376\355\307\237\103 \071\112\145\263\350\026\210\064\333\015\131\221\164\317\222\270 \004\100\255\002\113\061\253\274\215\221\150\330\040\016\032\001  $\label{eq:condition} $$ \frac{342}032\\173\\116\\027\\135\\342\\212\\267\\077\\231\\032\\315\\353\\141\\253$ \302\145\246\037\267\267\275\267\217\374\375\160\217\013\240\147 \276\001\242\131\317\161\346\017\051\166\377\261\126\171\105\053 \037\236\172\124\350\243\051\065\150\244\001\117\017\244\056\067 \357\033\277\343\217\020\250\162\253\130\127\347\124\206\310\311 \363\133\332\054\332\135\216\156\074\243\076\332\373\202\345\335 \362\134\262\005\063\157\212\066\316\320\023\116\377\277\112\014 \064\114\246\303\041\275\120\004\125\353\261\273\235\373\105\036 \144\025\336\125\001\214\002\166\265\313\241\077\102\151\274\057 \275\150\103\026\126\211\052\067\141\221\375\246\256\116\300\313 \024\145\224\067\113\222\006\357\004\320\310\234\210\333\013\173

\201\257\261\075\052\304\145\072\170\266\356\334\200\261\322\323 \231\234\072\356\153\132\153\263\215\267\325\316\234\302\276\245 \113\057\026\261\236\150\073\006\157\256\175\237\370\336\354\314  $\label{eq:condition} $$ \051\247\230\243\045\103\057\357\361\137\046\341\210\115\370\136$ \156\327\331\024\156\031\063\151\247\073\204\211\223\304\123\125 \023\241\121\170\100\370\270\311\242\356\173\272\122\102\203\236 \024\355\005\122\132\131\126\247\227\374\235\077\012\051\330\334 \117\221\016\023\274\336\225\244\337\213\231\276\254\233\063\210 \357\265\201\257\033\306\042\123\310\366\307\356\227\024\260\305 \174\170\122\310\360\316\156\167\140\204\246\351\052\166\040\355 \130\001\027\060\223\351\032\213\340\163\143\331\152\222\224\111 \116\264\255\112\205\304\243\042\060\374\011\355\150\042\163\246 \210\014\125\041\130\305\341\072\237\052\335\312\341\220\340\331 \163\253\154\200\270\350\013\144\223\240\234\214\031\377\263\322  $\label{eq:condition} $$ \014\354\221\046\207\212\263\242\341\160\217\054\012\345\315\155$$ \150\121\353\332\077\005\177\213\062\346\023\134\153\376\137\100  $\label{eq:condition} $$ 342\042\310\264\264\144\117\326\272\175\110\076\250\151\014\327$ \273\206\161\311\163\270\077\073\235\045\113\332\377\100\353\002 \003\001\000\001\243\202\001\225\060\202\001\221\060\017\006\003 \125\035\023\001\001\377\004\005\060\003\001\001\377\060\201\341 \006\003\125\035\040\004\201\331\060\201\326\060\201\323\006\011 \053\006\001\004\001\276\130\000\003\060\201\305\060\201\223\006 \156\171\040\165\163\145\040\157\146\040\164\150\151\163\040\103 \145\162\164\151\146\151\143\141\164\145\040\143\157\156\163\164 \151\164\165\164\145\163\040\141\143\143\145\160\164\141\156\143 \145\040\157\146\040\164\150\145\040\121\165\157\126\141\144\151 \163\040\122\157\157\164\040\103\101\040\063\040\103\145\162\164 \151\146\151\143\141\164\145\040\120\157\154\151\143\171\040\057 \040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\120 \164\056\060\055\006\010\053\006\001\005\005\007\002\001\026\041 \150\164\164\160\072\057\057\167\167\167\056\161\165\157\166\141 \144\151\163\147\154\157\142\141\154\056\143\157\155\057\143\160 \163\060\013\006\003\125\035\017\004\004\003\002\001\006\060\035 \006\003\125\035\016\004\026\004\024\362\300\023\340\202\103\076 \373\356\057\147\062\226\065\134\333\270\313\002\320\060\156\006 \003\125\035\043\004\147\060\145\200\024\362\300\023\340\202\103  $\label{eq:condition} $$ \076\373\356\057\147\062\226\065\134\333\270\313\002\320\241\111$ \244\107\060\105\061\013\060\011\006\003\125\004\006\023\002\102 \115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126 \141\144\151\163\040\114\151\155\151\164\145\144\061\033\060\031 \006\003\125\004\003\023\022\121\165\157\126\141\144\151\163\040 \122\157\157\164\040\103\101\040\063\202\002\005\306\060\015\006 \011\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001 \000\117\255\240\054\114\372\300\362\157\367\146\125\253\043\064 \356\347\051\332\303\133\266\260\203\331\320\320\342\041\373\363  $\label{eq:condition} $$ 140\247\073\135\140\123\047\242\233\366\010\042\052\347\277\240 $$$ 

\162\345\234\044\152\061\261\220\172\047\333\204\021\211\047\246 \167\132\070\327\277\254\206\374\356\135\203\274\006\306\321\167 \210\213\035\253\026\215\133\146\027\331\026\364\213\200\322\335 \370\262\166\303\374\070\023\252\014\336\102\151\053\156\363\074  $\label{eq:condition} $$ \353\200\047\333\365\246\104\015\237\132\125\131\013\325\015\122$ \110\305\256\237\362\057\200\305\352\062\120\065\022\227\056\301  $\label{eq:condition} $$ \frac{341}{377}\frac{361}{043}\frac{210}{121}\frac{070}{237}\frac{362}{146}\frac{126}{166}\frac{347}{017}\frac{121}{227} $$ \245\122\014\115\111\121\225\066\075\277\242\113\014\020\035\206 \231\114\252\363\162\021\223\344\352\366\233\332\250\135\247\115 \267\236\002\256\163\000\310\332\043\003\350\371\352\031\164\142  $\label{eq:condition} $$ \000\224\313\042\040\276\224\247\131\265\202\152\276\231\171\172$ \251\362\112\044\122\367\164\375\272\116\346\250\035\002\156\261 \015\200\104\301\256\323\043\067\137\273\205\174\053\222\056\350 \176\245\213\335\231\341\277\047\157\055\135\252\173\207\376\012 \335\113\374\216\365\046\344\156\160\102\156\063\354\061\236\173 \223\301\344\311\151\032\075\300\153\116\042\155\356\253\130\115 \306\320\101\301\053\352\117\022\207\136\353\105\330\154\365\230  $\label{eq:condition} $$ \002\323\240\330\125\212\006\231\031\242\240\167\321\060\236\254$$ \314\165\356\203\365\260\142\071\317\154\127\342\114\322\221\013 \016\165\050\033\232\277\375\032\103\361\312\167\373\073\217\141  $\label{eq:condition} $$ \270\151\050\026\102\004\136\160\052\034\041\330\217\341\275\043 $$$ \133\055\164\100\222\331\143\031\015\163\335\151\274\142\107\274 \340\164\053\262\353\175\276\101\033\265\300\106\305\241\042\313  $\label{eq:condition} $$ \frac{137}{116}\frac{301}{050}\frac{222}{336}\frac{030}{272}\frac{325}{052}\frac{050}{273}\frac{21}{213}\frac{027}{223} $$$ \230\231\140\224\134\043\317\132\047\227\136\013\005\006\223\067 \036\073\151\066\353\251\236\141\035\217\062\332\216\014\326\164  $\label{eq:condition} $$ \076\173\011\044\332\001\167\107\304\073\315\064\214\231\365\312 $$$ \341\045\141\063\262\131\033\342\156\327\067\127\266\015\251\022 \332

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "QuoVadis Root CA 3"
```

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

<sup>#</sup> Issuer: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM

<sup>#</sup> Serial Number: 1478 (0x5c6)

<sup>#</sup> Subject: CN=QuoVadis Root CA 3,O=QuoVadis Limited,C=BM

<sup>#</sup> Not Valid Before: Fri Nov 24 19:11:23 2006 # Not Valid After : Mon Nov 24 19:06:44 2031

<sup>#</sup> Fingerprint (SHA-256):

<sup>18:</sup>F1:FC:7F:20:5D:F8:AD:DD:EB:7F:E0:07:DD:57:E3:AF:37:5A:9C:4D:8D:73:54:6B:F4:F1:FE:D1:E1:8D:35

<sup>#</sup> Fingerprint (SHA1): 1F:49:14:F7:D8:74:95:1D:DD:AE:02:C0:BE:FD:3A:2D:82:75:51:85

```
CKA LABEL UTF8 "QuoVadis Root CA 3"
CKA CERT SHA1 HASH MULTILINE OCTAL
\037\111\024\367\330\164\225\035\335\256\002\300\276\375\072\055
\202\165\121\205
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\061\205\074\142\224\227\143\271\252\375\211\116\257\157\340\317
END
CKA_ISSUER MULTILINE_OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\033\060\031\006\003
\125\004\003\023\022\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\002\005\306
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
{\tt CKA\_TRUST\_STEP\_UP\_APPROVED\ CK\_BBOOL\ CK\_FALSE}
# Certificate "Security Communication Root CA"
# Issuer: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
# Serial Number: 0 (0x0)
# Subject: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
# Not Valid Before: Tue Sep 30 04:20:49 2003
# Not Valid After: Sat Sep 30 04:20:49 2023
# Fingerprint (SHA-256):
E7:5E:72:ED:9F:56:0E:EC:6E:B4:80:00:73:A4:3F:C3:AD:19:19:5A:39:22:82:01:78:95:97:4A:99:02:6B:6C
# Fingerprint (SHA1): 36:B1:2B:49:F9:81:9E:D7:4C:9E:BC:38:0F:C6:56:8F:5D:AC:B2:F7
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061\
\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155
\verb|\155|165|156|151|143|141|164|151|157|156|040|122|157|157|164|103|
\101\061
END
```

#### CKA ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061 $$ \030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040 $$ \124\165\165\165\163\164\056\156\145\164\061\047\060\045\006\003\125 $$ \004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155 $$ \155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103 $$ \101\061$$ 

**END** 

CKA SERIAL NUMBER MULTILINE OCTAL

\002\001\000

**END** 

### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\003\132\060\202\002\102\240\003\002\001\0002\0001\000$  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\005\005\000\060 $$$ \120\061\013\060\011\006\003\125\004\006\023\002\112\120\061\030  $\label{eq:condition} $$ \004\003\125\004\012\023\017\123\105\103\117\115\040\124 $$$ \162\165\163\164\056\156\145\164\061\047\060\045\006\003\125\004 \013\023\036\123\145\143\165\162\151\164\171\040\103\157\155\155 \061\060\036\027\015\060\063\060\071\063\060\060\064\062\060\064 \071\132\027\015\062\063\060\071\063\060\060\064\062\060\064\071  $\label{eq:condition} $$ 132\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120$ \061\030\060\026\006\003\125\004\012\023\017\123\105\103\117\115  $\label{eq:condition} $$ \040\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003$$ \125\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157 \155\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164 \103\101\061\060\202\001\042\060\015\006\011\052\206\110\206\367 \015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002 \202\001\001\000\263\263\376\177\323\155\261\357\026\174\127\245  $\label{eq:condition} $$ \014\155\166\212\057\113\277\144\373\114\356\212\360\363\051\174$$$ \365\377\356\052\340\351\351\272\133\144\042\232\232\157\054\072 \046\151\121\005\231\046\334\325\034\152\161\306\232\175\036\235 \335\174\154\306\214\147\147\112\076\370\161\260\031\047\251\011 \014\246\225\277\113\214\014\372\125\230\073\330\350\042\241\113 \161\070\171\254\227\222\151\263\211\176\352\041\150\006\230\024 \226\207\322\141\066\274\155\047\126\236\127\356\300\300\126\375  $\label{eq:condition} $$ \062\317\244\331\216\302\043\327\215\250\363\330\045\254\227\344$$$  $\label{eq:condition} $$ 160\070\364\266\072\264\235\073\227\046\103\243\241\274\111\131$ \162\114\043\060\207\001\130\366\116\276\034\150\126\146\257\315 \101\135\310\263\115\052\125\106\253\037\332\036\342\100\075\333 \315\175\271\222\200\234\067\335\014\226\144\235\334\042\367\144 \213\337\141\336\025\224\122\025\240\175\122\311\113\250\041\311 \306\261\355\313\303\225\140\321\017\360\253\160\370\337\313\115  $\label{eq:condition} $$ \frac{354}326\frac{372}253\frac{331}275\frac{177}124\frac{362}245\frac{351}{171}\frac{372}331\frac{326}{351}$$ \166\044\050\163\002\003\001\000\001\243\077\060\075\060\035\006 \003\125\035\016\004\026\004\024\240\163\111\231\150\334\205\133 \145\343\233\050\057\127\237\275\063\274\007\110\060\013\006\003

\125\035\017\004\004\003\002\001\006\060\017\006\003\125\035\023 \001\001\377\004\005\060\003\001\001\377\060\015\006\011\052\206  $\label{eq:condition} $$ 110\206\367\015\001\001\005\000\003\202\001\001\000\150\100 $$ \251\250\273\344\117\135\171\263\005\265\027\263\140\023\353\306 \222\135\340\321\323\152\376\373\276\233\155\277\307\005\155\131 \040\304\034\360\267\332\204\130\002\143\372\110\026\357\117\245 \013\367\112\230\362\077\236\033\255\107\153\143\316\010\107\353 \071\122\304\335\331\233\016\357\223\001\256\262\056\312\150\102 \044\102\154\260\263\072\076\315\351\332\110\304\025\313\351\371  $\label{eq:condition} $$ \007\017\222\120\111\212\335\061\227\137\311\351\067\252\073\131 $$$ \145\227\224\062\311\263\237\076\072\142\130\305\111\255\142\016 \161\245\062\252\057\306\211\166\103\100\023\023\147\075\242\124 \045\020\313\361\072\362\331\372\333\111\126\273\246\376\247\101  $\label{eq:condition} $$ \065\303\340\210\141\311\210\307\337\066\020\042\230\131\352\260 $$$ \112\373\126\026\163\156\254\115\367\042\241\117\255\035\172\055 \105\047\345\060\301\136\362\332\023\313\045\102\121\225\107\003 \214\154\041\314\164\102\355\123\377\063\213\217\017\127\001\026 \057\317\246\356\311\160\042\024\275\375\276\154\013\003 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Security Communication Root CA"
- # Issuer: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
- # Serial Number: 0 (0x0)
- # Subject: OU=Security Communication RootCA1,O=SECOM Trust.net,C=JP
- # Not Valid Before: Tue Sep 30 04:20:49 2003
- # Not Valid After: Sat Sep 30 04:20:49 2023
- # Fingerprint (SHA-256):

E7:5E:72:ED:9F:56:0E:EC:6E:B4:80:00:73:A4:3F:C3:AD:19:19:5A:39:22:82:01:78:95:97:4A:99:02:6B:6C

# Fingerprint (SHA1): 36:B1:2B:49:F9:81:9E:D7:4C:9E:BC:38:0F:C6:56:8F:5D:AC:B2:F7

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Security Communication Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \066\261\053\111\371\201\236\327\114\236\274\070\017\306\126\217\135\254\262\367$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \frac{361}{274}143\frac{32}{124}340\frac{65}{047}365\frac{315}{347}032\frac{343}{115}156\frac{112}{124}$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\120\061\013\060\011\006\003\125\004\006\023\002\112\120\061 \030\060\026\006\003\125\004\012\023\017\123\105\103\117\115\040

```
\124\162\165\163\164\056\156\145\164\061\047\060\045\006\003\125
\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155
\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103
\101\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Camerfirma Chambers of Commerce Root"
# Issuer: CN=Chambers of Commerce Root, OU=http://www.chambersign.org, O=AC Camerfirma SA CIF
A82743287.C=EU
# Serial Number: 0 (0x0)
# Subject: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
# Not Valid Before: Tue Sep 30 16:13:43 2003
# Not Valid After: Wed Sep 30 16:13:44 2037
# Fingerprint (SHA-256):
0C:25:8A:12:A5:67:4A:EF:25:F2:8B:A7:DC:FA:EC:EE:A3:48:E5:41:E6:F5:CC:4E:E6:3B:71:B3:61:60:6A:C3
# Fingerprint (SHA1): 6E:3A:55:A4:19:0C:19:5C:93:84:3C:C0:DB:72:2E:31:30:61:F0:B1
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Camerfirma Chambers of Commerce Root"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\\ \\ \langle 047 \rangle 060 \rangle 045 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 012 \rangle 023 \rangle 036 \rangle 101 \rangle 103 \rangle 040 \rangle 103 \rangle 141 \rangle 155 \rangle 125 
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
```

 $\label{eq:condition} $$ \062\063\062\070\067\061\043\060\041\006\003\125\004\013\023\032\150\164\164\160\072\057\057\167\167\167\167\056\143\150\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060\040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163\040\157\146\040\103\157\155\145\162\143\145\040\122\157\157\164$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\202\004\275\060\202\003\245\240\003\002\001\0002\0001\000$ \060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060  $\label{eq:condition} $$ \004\003\125\004\012\023\036\101\103\040\103\141\155\145$$ \162\146\151\162\155\141\040\123\101\040\103\111\106\040\101\070  $\label{eq:condition} $$ \062\067\064\063\062\070\067\061\043\060\041\006\003\125\004\013$ \023\032\150\164\164\160\072\057\057\167\167\167\056\143\150\141 \155\142\145\162\163\151\147\156\056\157\162\147\061\042\060\040  $\label{eq:condition} $$ \006\003\125\004\003\023\031\103\150\141\155\142\145\162\163\040 $$$ \157\146\040\103\157\155\155\145\162\143\145\040\122\157\157\164 \060\036\027\015\060\063\060\071\063\060\061\066\061\063\064\063  $\label{eq:condition} $$ 132\027\015\063\067\060\071\063\060\061\066\061\066\064\064\132$ \060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061 \047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155 \145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101 \070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004  $\label{eq:condition} $$ \013\023\032\150\164\164\160\072\057\057\167\167\167\167\056\143\150 $$$ \141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060 \040\006\003\125\004\003\023\031\103\150\141\155\142\145\162\163  $\\ \langle 040 \rangle 157 \rangle 146 \langle 040 \rangle 103 \rangle 157 \rangle 155 \rangle 145 \rangle 162 \rangle 143 \rangle 145 \rangle 040 \rangle 122 \rangle 157 \rangle$ \164\060\202\001\040\060\015\006\011\052\206\110\206\367\015\001 \001\001\005\000\003\202\001\015\000\060\202\001\010\002\202\001 \001\000\267\066\125\345\245\135\030\060\340\332\211\124\221\374 \310\307\122\370\057\120\331\357\261\165\163\145\107\175\033\133 \272\165\305\374\241\210\044\372\057\355\312\010\112\071\124\304 \121\172\265\332\140\352\070\074\201\262\313\361\273\331\221\043  $\label{eq:condition} $$ \077\110\001\160\165\251\005\052\255\037\161\363\311\124\075\035 $$$  $\label{eq:condition} $$ \006\152\100\076\263\014\205\356\134\033\171\302\142\304\270\066$$$ \216\065\135\001\014\043\004\107\065\252\233\140\116\240\146\075 \313\046\012\234\100\241\364\135\230\277\161\253\245\000\150\052 \355\203\172\017\242\024\265\324\042\263\200\260\074\014\132\121 \151\055\130\030\217\355\231\236\361\256\342\225\346\366\107\250 \326\014\017\260\130\130\333\303\146\067\236\233\221\124\063\067 \322\224\034\152\110\311\311\362\245\332\245\014\043\367\043\016 \234\062\125\136\161\234\204\005\121\232\055\375\346\116\052\064 \132\336\312\100\067\147\014\124\041\125\167\332\012\014\314\227 \256\200\334\224\066\112\364\076\316\066\023\036\123\344\254\116

\072\005\354\333\256\162\234\070\213\320\071\073\211\012\076\167 \376\165\002\001\003\243\202\001\104\060\202\001\100\060\022\006 \003\125\035\023\001\001\377\004\010\060\006\001\001\377\002\001 \014\060\074\006\003\125\035\037\004\065\060\063\060\061\240\057 \240\055\206\053\150\164\164\160\072\057\057\143\162\154\056\143 \150\141\155\142\145\162\163\151\147\156\056\157\162\147\057\143 \150\141\155\142\145\162\163\162\157\157\164\056\143\162\154\060 \035\006\003\125\035\016\004\026\004\024\343\224\365\261\115\351  $\label{eq:condition} $$ 333\241\051\133\127\213\115\166\006\166\341\321\242\212\060\016$ \006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\021 \006\011\140\206\110\001\206\370\102\001\001\004\004\003\002\000  $\\ \\007\\ \\060\\ \\047\\ \\006\\ \\003\\ \\125\\ \\035\\ \\021\\ \\004\\ \\040\\ \\060\\ \\036\\ \\201\\ \\034\\ \\143\\ \\150$ \141\155\142\145\162\163\162\157\157\164\100\143\150\141\155\142  $\label{eq:condition} $$ \frac{145}{162}\frac{3}{151}\frac{147}{156}\frac{056}{157}\frac{162}{147}\frac{060}{047}\frac{006}{003}\frac{125}{035} $$$  $\label{eq:condition} $$ \022\004\040\060\036\201\034\143\150\141\155\142\145\162\163\162$ \157\157\164\100\143\150\141\155\142\145\162\163\151\147\156\056  $\label{eq:condition} $$ \frac{157}{162}\frac{147}{060}\frac{130}{006}\frac{103}{125}\frac{035}{040}\frac{121}{060}\frac{117}{060}\frac{115}{150} $$$ \006\013\053\006\001\004\001\201\207\056\012\003\001\060\076\060 \074\006\010\053\006\001\005\005\007\002\001\026\060\150\164\164  $\label{eq:condition} $$ 160\072\057\057\143\160\163\056\143\150\141\155\142\145\162\163$ \151\147\156\056\157\162\147\057\143\160\163\057\143\150\141\155 \142\145\162\163\162\157\157\164\056\150\164\155\154\060\015\006  $\label{eq:condition} $$ \011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001$ \000\014\101\227\302\032\206\300\042\174\237\373\220\363\032\321  $\label{eq:condition} $$ \003\261\357\023\371\041\137\004\234\332\311\245\215\047\154\226 $$$ \207\221\276\101\220\001\162\223\347\036\175\137\366\211\306\135 \247\100\011\075\254\111\105\105\334\056\215\060\150\262\011\272  $\label{eq:condition} $$ 373\303\057\314\272\013\337\077\167\173\106\175\072\022\044\216 $$$ \226\217\074\005\012\157\322\224\050\035\155\014\300\056\210\042 \325\330\317\035\023\307\360\110\327\327\005\247\317\307\107\236  $\label{eq:condition} $$ \073\074\064\310\200\117\324\024\273\374\015\120\367\372\263\354$$ \102\137\251\335\155\310\364\165\317\173\301\162\046\261\001\034 \134\054\375\172\116\264\001\305\005\127\271\347\074\252\005\331 \210\351\007\106\101\316\357\101\201\256\130\337\203\242\256\312 \327\167\037\347\000\074\235\157\216\344\062\011\035\115\170\064 \170\064\074\224\233\046\355\117\161\306\031\172\275\040\042\110 \132\376\113\175\003\267\347\130\276\306\062\116\164\036\150\335 \250\150\133\263\076\356\142\175\331\200\350\012\165\172\267\356 \264\145\232\041\220\340\252\320\230\274\070\265\163\074\213\370 \334

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
# For Email Distrust After: Mon Mar 01 00:00:00 2021
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER MULTILINE\_OCTAL
\062\061\060\063\060\061\060\060\060\060\060\060\060\132
END

```
# Trust for "Camerfirma Chambers of Commerce Root"
# Issuer: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
# Serial Number: 0 (0x0)
# Subject: CN=Chambers of Commerce Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
# Not Valid Before: Tue Sep 30 16:13:43 2003
# Not Valid After: Wed Sep 30 16:13:44 2037
# Fingerprint (SHA-256):
0C:25:8A:12:A5:67:4A:EF:25:F2:8B:A7:DC:FA:EC:EE:A3:48:E5:41:E6:F5:CC:4E:E6:3B:71:B3:61:60:6A:C3
# Fingerprint (SHA1): 6E:3A:55:A4:19:0C:19:5C:93:84:3C:C0:DB:72:2E:31:30:61:F0:B1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Camerfirma Chambers of Commerce Root"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\156\072\125\244\031\014\031\134\223\204\074\300\333\162\056\061
\060\141\360\261
END
CKA CERT MD5 HASH MULTILINE OCTAL
\260\001\356\024\331\257\051\030\224\166\216\361\151\063\052\204
END
CKA ISSUER MULTILINE OCTAL
\060\177\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\label{eq:condition} $$ \070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\013\023\032\150\164\164\160\072\057\057\167\167\167\056\143\150
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\042\060
\\ \langle 040 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 003 \rangle 023 \rangle 031 \rangle 103 \rangle 150 \rangle 141 \rangle 155 \rangle 142 \rangle 145 \rangle 162 \rangle 163
\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157
\164
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
{\tt CKA\_TRUST\_EMAIL\_PROTECTION\ CK\_TRUST\ CKT\_NSS\_TRUSTED\_DELEGATOR}
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "Camerfirma Global Chambersign Root"
# Issuer: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF
A82743287,C=EU
# Serial Number: 0 (0x0)
```

# Subject: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF

A82743287.C=EU

# Not Valid Before: Tue Sep 30 16:14:18 2003

# Not Valid After: Wed Sep 30 16:14:18 2037

# Fingerprint (SHA-256):

EF:3C:B4:17:FC:8E:BF:6F:97:87:6C:9E:4E:CE:39:DE:1E:A5:FE:64:91:41:D1:02:8B:7D:11:C0:B2:29:8C:ED

# Fingerprint (SHA1): 33:9B:6B:14:50:24:9B:55:7A:01:87:72:84:D9:E0:2F:C3:D2:D8:E9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Camerfirma Global Chambersign Root"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061 $$$ 

 $\\ \\ \langle 047 \rangle 060 \rangle 045 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 012 \rangle 023 \rangle 036 \rangle 101 \rangle 103 \rangle 040 \rangle 103 \rangle 141 \rangle 155 \rangle 126 \rangle 127 \rangle 127$ 

 $\label{eq:condition} $$ 145\backslash 162\backslash 146\backslash 151\backslash 162\backslash 155\backslash 141\backslash 040\backslash 123\backslash 101\backslash 040\backslash 103\backslash 111\backslash 106\backslash 040\backslash 101$$ 

\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004

 $\\ \langle 013 \rangle 023 \rangle 032 \rangle 150 \rangle 164 \rangle 164 \rangle 160 \rangle 072 \rangle 057 \rangle 167 \rangle$ 

\141\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060

 $\\ \ \langle 036 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 003 \rangle 023 \rangle 027 \rangle 107 \rangle 154 \rangle 157 \rangle 142 \rangle 141 \rangle 154 \rangle 040 \rangle 103$ 

 $\label{eq:local_state} $$ \frac{150}{141}\frac{155}{142}\frac{162}{163}\frac{151}{147}\frac{156}{040}\frac{122}{157}\frac{164}{164}$$$ 

**END** 

CKA\_ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00175\061\013\060\011\006\003\125\004\006\023\002\105\125\061 \\ \047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155 \\ \145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101 \\ \070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004 \\ \013\023\032\150\164\164\166\072\057\057\167\167\167\167\056\143\150 \\ \141\155\142\145\162\163\151\147\156\056\157\142\141\154\040\103 \\ \036\006\003\125\004\003\023\027\107\154\157\142\141\155\164 \\ \end{tabular}$ 

END

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\027\015\060\063\060\071\063\060\061\066\061\064\061\070\132\027 \015\063\067\060\071\063\060\061\066\061\064\061\070\132\060\175 \061\013\060\011\006\003\125\004\006\023\002\105\125\061\047\060 \045\006\003\125\004\012\023\036\101\103\040\103\141\155\145\162 \146\151\162\155\141\040\123\101\040\103\111\106\040\101\070\062 \032\150\164\164\160\072\057\057\167\167\167\056\143\150\141\155 \142\145\162\163\151\147\156\056\157\162\147\061\040\060\036\006  $\\ \\003\\125\\004\\003\\023\\027\\107\\154\\157\\142\\141\\154\\040\\103\\150\\141$ \155\142\145\162\163\151\147\156\040\122\157\157\164\060\202\001 \040\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  $\label{eq:condition} $$ \000\001\001\000\002\001\001\000\242\160 $$$ \242\320\237\102\256\133\027\307\330\175\317\024\203\374\117\311  $\label{eq:condition} $$ \241\267\023\257\212\327\236\076\004\012\222\213\140\126\372\264 $$$  $\\ \begin{tabular}{l} $\langle 0.62 \rangle 0.57 \rangle 2.10 \rangle 1.15 \rangle 2.41 \rangle 1.40 \rangle 0.10 \rangle 3.64 \rangle 2.67 \rangle 0.11 \rangle 1.16 \rangle 2.40 \rangle 1.11 \rangle 0.57 \rangle 1.11 \rangle 3.26 \rangle 0.12 \rangle 0.12$ \323\337\235\227\132\237\224\004\160\354\077\131\331\267\314\146 \213\230\122\050\011\002\337\305\057\204\215\172\227\167\277\354 \100\235\045\162\253\265\077\062\230\373\267\267\374\162\204\345 \065\207\371\125\372\243\037\016\157\056\050\335\151\240\331\102  $\label{eq:condition} $$ \020\306\370\265\104\302\320\103\177\333\274\344\242\074\152\125$$ \170\012\167\251\330\352\031\062\267\057\376\134\077\033\356\261 \230\354\312\255\172\151\105\343\226\017\125\366\346\355\165\352  $\label{eq:condition} $$ 145\350\062\126\223\106\211\250\045\212\145\006\356\153\277\171 $$$ \007\320\361\267\257\355\054\115\222\273\300\250\137\247\147\175 \004\362\025\010\160\254\222\326\175\004\322\063\373\114\266\013 \013\373\032\311\304\215\003\251\176\134\362\120\253\022\245\241 \317\110\120\245\357\322\310\032\023\372\260\177\261\202\034\167 \152\017\137\334\013\225\217\357\103\176\346\105\011\045\002\001 \003\243\202\001\120\060\202\001\114\060\022\006\003\125\035\023 \001\001\377\004\010\060\006\001\001\377\002\001\014\060\077\006  $\label{eq:condition} $$ \03125\035\037\004\070\060\066\060\064\240\062\240\060\206\056$ \150\164\164\160\072\057\057\143\162\154\056\143\150\141\155\142 \145\162\163\151\147\156\056\157\162\147\057\143\150\141\155\142 \145\162\163\151\147\156\162\157\157\164\056\143\162\154\060\035 \006\003\125\035\016\004\026\004\024\103\234\066\237\260\236\060 \115\306\316\137\255\020\253\345\003\245\372\251\024\060\016\006 \003\125\035\017\001\001\377\004\004\003\002\001\006\060\021\006  $\label{eq:condition} $$ \011\140\206\110\001\206\370\102\001\001\004\004\003\002\000\007$  $\label{eq:condition} $$ \000\052\006\003\125\035\021\004\043\060\041\201\037\143\150\141 $$$ \155\142\145\162\163\151\147\156\056\157\162\147\060\052\006\003 \125\035\022\004\043\060\041\201\037\143\150\141\155\142\145\162 \163\151\147\156\162\157\157\164\100\143\150\141\155\142\145\162 \163\151\147\156\056\157\162\147\060\133\006\003\125\035\040\004 \124\060\122\060\120\006\013\053\006\001\004\001\201\207\056\012 \001\001\060\101\060\077\006\010\053\006\001\005\005\007\002\001 \026\063\150\164\164\160\072\057\057\143\160\163\056\143\150\141 \155\142\145\162\163\151\147\156\056\157\162\147\057\143\160\163

\057\143\150\141\155\142\145\162\163\151\147\156\162\157\157\164 \056\150\164\155\154\060\015\006\011\052\206\110\206\367\015\001  $\\ \\001\\\\005\\\\000\\\\000\\\\000\\\\000\\\\001\\\\000\\\\0074\\\\0073\\\\160\\\\221\\\\371\\\\004\\\\124$  $\\ \langle 047 \rangle 221 \rangle 341 \rangle 355 \rangle 376 \rangle 150 \rangle 177 \rangle 141 \rangle 135 \rangle 345 \rangle 101 \rangle 145 \rangle 117 \rangle 062 \rangle 361$  $\label{eq:condition} $$ \030\005\224\152\034\336\037\160\333\076\173\062\002\064\265\014$$$ \154\241\212\174\245\364\217\377\324\330\255\027\325\055\004\321 \077\130\200\342\201\131\210\276\300\343\106\223\044\376\220\275 \046\242\060\055\350\227\046\127\065\211\164\226\030\366\025\342 \257\044\031\126\002\002\262\272\017\024\352\306\212\146\301\206 \105\125\213\276\222\276\234\244\004\307\111\074\236\350\051\172 \211\327\376\257\377\150\365\245\027\220\275\254\231\314\245\206  $\label{eq:condition} $$ \frac{127}{011}147}106\\333\\326\\026\\302\\106\\361\\344\\251\\120\\365\\217\\321$ \222\025\323\137\076\306\000\111\072\156\130\262\321\321\047\015 \045\310\062\370\040\021\315\175\062\063\110\224\124\114\335\334 \171\304\060\237\353\216\270\125\265\327\210\134\305\152\044\075 \262\323\005\003\121\306\007\357\314\024\162\164\075\156\162\316  $\label{eq:condition} $$ \030\050\214\112\240\167\345\011\053\105\104\107\254\267\147\177$ \001\212\005\132\223\276\241\301\377\370\347\016\147\244\107\111 \166\135\165\220\032\365\046\217\360

**END** 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
# For Email Distrust After: Mon Mar 01 00:00:00 2021
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER MULTILINE\_OCTAL
\062\061\060\063\060\061\060\060\060\060\060\060\060\132

# Trust for "Camerfirma Global Chambersign Root"

# Issuer: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF A82743287,C=EU

# Serial Number: 0 (0x0)

# Subject: CN=Global Chambersign Root,OU=http://www.chambersign.org,O=AC Camerfirma SA CIF A82743287,C=EU

# Not Valid Before: Tue Sep 30 16:14:18 2003 # Not Valid After: Wed Sep 30 16:14:18 2037

# Fingerprint (SHA-256):

EF:3C:B4:17:FC:8E:BF:6F:97:87:6C:9E:4E:CE:39:DE:1E:A5:FE:64:91:41:D1:02:8B:7D:11:C0:B2:29:8C:ED

# Fingerprint (SHA1): 33:9B:6B:14:50:24:9B:55:7A:01:87:72:84:D9:E0:2F:C3:D2:D8:E9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Camerfirma Global Chambersign Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \063\233\153\024\120\044\233\125\172\001\207\162\204\331\340\057$$$ 

\303\322\330\351

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\305\346\173\277\006\320\117\103\355\304\172\145\212\373\153\031
END
CKA ISSUER MULTILINE OCTAL
\060\175\061\013\060\011\006\003\125\004\006\023\002\105\125\061
\047\060\045\006\003\125\004\012\023\036\101\103\040\103\141\155
\145\162\146\151\162\155\141\040\123\101\040\103\111\106\040\101
\070\062\067\064\063\062\070\067\061\043\060\041\006\003\125\004
\label{eq:condition} $$ \032\032\150\164\164\160\072\057\057\167\167\167\056\143\150 $$
\141\155\142\145\162\163\151\147\156\056\157\162\147\061\040\060
\036\006\003\125\004\003\023\027\107\154\157\142\141\154\040\103
\150\141\155\142\145\162\163\151\147\156\040\122\157\157\164
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\001\000
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
{\tt CKA\_TRUST\_STEP\_UP\_APPROVED\ CK\_BBOOL\ CK\_FALSE}
# Certificate "XRamp Global CA Root"
# Issuer: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US
# Serial Number:50:94:6c:ec:18:ea:d5:9c:4d:d5:97:ef:75:8f:a0:ad
# Subject: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US
# Not Valid Before: Mon Nov 01 17:14:04 2004
# Not Valid After: Mon Jan 01 05:37:19 2035
# Fingerprint (SHA-256):
CE:CD:DC:90:50:99:D8:DA:DF:C5:B1:D2:09:B7:37:CB:E2:C1:8C:FB:2C:10:C0:FF:0B:CF:0D:32:86:FC:1A:A2
# Fingerprint (SHA1): B8:01:86:D1:EB:9C:86:A5:41:04:CF:30:54:F3:4C:52:B7:E5:58:C6
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "XRamp Global CA Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\162\141\155\160\163\145\143\165\162\151\164\171\056\143\157\155
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
```

\157\162\151\164\171

**END** 

CKA ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\120\224\154\354\030\352\325\234\115\325\227\357\165\217 \240\255

**END** 

### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \0.060\202\003\030\240\003\002\001\002\002\020\120 $$$ \224\154\354\030\352\325\234\115\325\227\357\165\217\240\255\060 \015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201  $\label{eq:condition} $$ \202\061\013\060\011\006\003\125\004\006\023\002\125\123\061\036$ \060\034\006\003\125\004\013\023\025\167\167\167\056\170\162\141 \155\160\163\145\143\165\162\151\164\171\056\143\157\155\061\044 \060\042\006\003\125\004\012\023\033\130\122\141\155\160\040\123 \145\143\165\162\151\164\171\040\123\145\162\166\151\143\145\163 \040\111\156\143\061\055\060\053\006\003\125\004\003\023\044\130 \122\141\155\160\040\107\154\157\142\141\154\040\103\145\162\164 \151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162 \151\164\171\060\036\027\015\060\064\061\061\060\061\061\067\061 \064\060\064\132\027\015\063\065\060\061\060\061\060\065\063\067 \061\071\132\060\201\202\061\013\060\011\006\003\125\004\006\023 \002\125\123\061\036\060\034\006\003\125\004\013\023\025\167\167 \167\056\170\162\141\155\160\163\145\143\165\162\151\164\171\056 \143\157\155\061\044\060\042\006\003\125\004\012\023\033\130\122 \141\155\160\040\123\145\143\165\162\151\164\171\040\123\145\162 \166\151\143\145\163\040\111\156\143\061\055\060\053\006\003\125  $\\ \\004\\ \\003\\ \\023\\ \\044\\ \\130\\ \\122\\ \\141\\ \\155\\ \\160\\ \\040\\ \\107\\ \\154\\ \\157\\ \\142\\ \\141\\ \\154$  $\\ \\ 040\\ \\ 103\\ \\ 145\\ \\ 162\\ \\ 164\\ \\ 151\\ \\ 146\\ \\ 151\\ \\ 143\\ \\ 141\\ \\ 164\\ \\ 151\\ \\ 157\\ \\ 156\\ \\ 040\\ \\ 101$ \165\164\150\157\162\151\164\171\060\202\001\042\060\015\006\011 \052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000 \060\202\001\012\002\202\001\001\000\230\044\036\275\025\264\272 \337\307\214\245\047\266\070\013\151\363\266\116\250\054\056\041 \035\134\104\337\041\135\176\043\164\376\136\176\264\112\267\246 \255\037\256\340\006\026\342\233\133\331\147\164\153\135\200\217 \051\235\206\033\331\234\015\230\155\166\020\050\130\344\145\260 \177\112\230\171\237\340\303\061\176\200\053\265\214\300\100\073

\021\206\320\313\242\206\066\140\244\325\060\202\155\331\156\320 \017\022\004\063\227\137\117\141\132\360\344\371\221\253\347\035 \073\274\350\317\364\153\055\064\174\342\110\141\034\216\363\141 \104\314\157\240\112\251\224\260\115\332\347\251\064\172\162\070 \250\101\314\074\224\021\175\353\310\246\214\267\206\313\312\063  $\label{eq:condition} $$ \073\331\075\067\213\373\172\076\206\054\347\163\327\012\127\254$$ \144\233\031\353\364\017\004\010\212\254\003\027\031\144\364\132  $\label{eq:condition} $$ \045\042\215\064\054\262\366\150\035\022\155\323\212\036\024\332 $$$ \304\217\246\342\043\205\325\172\015\275\152\340\351\354\354\027 \273\102\033\147\252\045\355\105\203\041\374\301\311\174\325\142  $\label{eq:condition} $$ \076\372\362\305\055\323\375\324\145\002\003\001\000\001\243\201 $$$ \237\060\201\234\060\023\006\011\053\006\001\004\001\202\067\024 \002\004\006\036\004\000\103\000\101\060\013\006\003\125\035\017  $\label{eq:condition} $$ \004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377 $$$  $\\ \\004\\ \\005\\ \\060\\ \\003\\ \\001\\ \\001\\ \\001\\ \\377\\ \\060\\ \\035\\ \\006\\ \\003\\ \\125\\ \\035\\ \\016\\ \\004\\ \\026$ \004\024\306\117\242\075\006\143\204\011\234\316\142\344\004\254 \215\134\265\351\266\033\060\066\006\003\125\035\037\004\057\060 \055\060\053\240\051\240\047\206\045\150\164\164\160\072\057\057 \143\162\154\056\170\162\141\155\160\163\145\143\165\162\151\164  $\label{eq:condition} $$ \frac{171}056\\143\\157\\155\\057\\130\\107\\103\\101\\056\\143\\162\\154\\060\\020$ \006\011\053\006\001\004\001\202\067\025\001\004\003\002\001\001 \060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003  $\label{eq:condition} $$ \202\001\001\000\221\025\071\003\001\033\147\373\112\034\371\012$ \140\133\241\332\115\227\142\371\044\123\047\327\202\144\116\220  $\label{eq:condition} $$ \056\303\111\033\053\232\334\374\250\170\147\065\361\035\360\021 $$$ \275\267\110\343\020\366\015\337\077\322\311\266\252\125\244\110 \272\002\333\336\131\056\025\133\073\235\026\175\107\327\067\352 \137\115\166\022\066\273\037\327\241\201\004\106\040\243\054\155 \251\236\001\176\077\051\316\000\223\337\375\311\222\163\211\211 \144\236\347\053\344\034\221\054\322\271\316\175\316\157\061\231  $\label{eq:condition} $$ 323\346\276\322\036\220\360\011\024\171\134\043\253\115\322\332$ \041\037\115\231\171\235\341\317\047\237\020\233\034\210\015\260 \212\144\101\061\270\016\154\220\044\244\233\134\161\217\272\273 \176\034\033\333\152\200\017\041\274\351\333\246\267\100\364\262 \213\251\261\344\357\232\032\320\075\151\231\356\250\050\243\341 \074\263\360\262\021\234\317\174\100\346\335\347\103\175\242\330 \072\265\251\215\362\064\231\304\324\020\341\006\375\011\204\020  $\label{eq:condition} $$ \073\356\304\114\364\354\047\174\102\302\164\174\202\212\011\311$ \264\003\045\274

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "XRamp Global CA Root"

<sup>#</sup> Issuer: CN=XRamp Global Certification Authority,O=XRamp Security Services Inc,OU=www.xrampsecurity.com,C=US

<sup>#</sup> Serial Number:50:94:6c:ec:18:ea:d5:9c:4d:d5:97:ef:75:8f:a0:ad

```
# Subject: CN=XRamp Global Certification Authority,O=XRamp Security Services
Inc,OU=www.xrampsecurity.com,C=US
# Not Valid Before: Mon Nov 01 17:14:04 2004
# Not Valid After: Mon Jan 01 05:37:19 2035
# Fingerprint (SHA-256):
CE:CD:DC:90:50:99:D8:DA:DF:C5:B1:D2:09:B7:37:CB:E2:C1:8C:FB:2C:10:C0:FF:0B:CF:0D:32:86:FC:1A:A2
# Fingerprint (SHA1): B8:01:86:D1:EB:9C:86:A5:41:04:CF:30:54:F3:4C:52:B7:E5:58:C6
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "XRamp Global CA Root"
CKA CERT SHA1 HASH MULTILINE OCTAL
\270\001\206\321\353\234\206\245\101\004\317\060\124\363\114\122
\267\345\130\306
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\013\104\263\312\020\330\000\156\235\017\330\017\222\012\321
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\036\060\034\006\003\125\004\013\023\025\167\167\167\056\170
\061\044\060\042\006\003\125\004\012\023\033\130\122\141\155\160
\040\123\145\143\165\162\151\164\171\040\123\145\162\166\151\143
\145\163\040\111\156\143\061\055\060\053\006\003\125\004\003\023
\044\130\122\141\155\160\040\107\154\157\142\141\154\040\103\145
\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\120\224\154\354\030\352\325\234\115\325\227\357\165\217
\240\255
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "Go Daddy Class 2 CA"
# Issuer: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US
# Serial Number: 0 (0x0)
# Subject: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US
# Not Valid Before: Tue Jun 29 17:06:20 2004
# Not Valid After: Thu Jun 29 17:06:20 2034
# Fingerprint (SHA-256):
```

C3:84:6B:F2:4B:9E:93:CA:64:27:4C:0E:C6:7C:1E:CC:5E:02:4F:FC:AC:D2:D7:40:19:35:0E:81:FE:54:6A:E4

# Fingerprint (SHA1): 27:96:BA:E6:3F:18:01:E2:77:26:1B:A0:D7:77:70:02:8F:20:EE:E4 CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "Go Daddy Class 2 CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \00143\061\013\060\011\006\003\125\004\006\023\002\125\123\061\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171$ 

**END** 

CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \00143\061\013\060\011\006\003\125\004\006\023\002\125\123\061\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156\143\056\061\061\060\057\006\003\125\004\013\023\050\107\157\040\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

END

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\000\060\202\002\350\240\003\002\001\002\002\001\000 \060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060 \143\061\013\060\011\006\003\125\004\006\023\002\125\123\061\041 \060\037\006\003\125\004\012\023\030\124\150\145\040\107\157\040 \104\141\144\144\171\040\107\162\157\165\160\054\040\111\156\143 \056\061\061\060\057\006\003\125\004\013\023\050\107\157\040\104 \141\144\144\171\040\103\154\141\163\163\040\062\040\103\145\162 \162\151\164\171\060\036\027\015\060\064\060\066\062\071\061\067 \060\066\062\060\132\027\015\063\064\060\066\062\071\061\067\060 \066\062\060\132\060\143\061\013\060\011\006\003\125\004\006\023 \002\125\123\061\041\060\037\006\003\125\004\012\023\030\124\150 \145\040\107\157\040\104\141\144\144\171\040\107\162\157\165\160 \054\040\111\156\143\056\061\061\060\057\006\003\125\004\013\023 \050\107\157\040\104\141\144\144\171\040\103\154\141\163\163\040 \062\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040 \101\165\164\150\157\162\151\164\171\060\202\001\040\060\015\006

\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\015 \000\060\202\001\010\002\202\001\001\000\336\235\327\352\127\030 \111\241\133\353\327\137\110\206\352\276\335\377\344\357\147\034 \364\145\150\263\127\161\240\136\167\273\355\233\111\351\160\200 \075\126\030\143\010\157\332\362\314\320\077\177\002\124\042\124  $\label{eq:condition} $$ \020\330\262\201\324\300\165\075\113\177\307\167\303\076\170\253$ \032\003\265\040\153\057\152\053\261\305\210\176\304\273\036\260 \301\330\105\047\157\252\067\130\367\207\046\327\330\055\366\251  $\label{eq:condition} $$ \027\267\037\162\066\116\246\027\077\145\230\222\333\052\156\135 $$$ \242\376\210\340\013\336\177\345\215\025\341\353\313\072\325\342  $\label{eq:condition} $$ \022\242\023\055\330\216\257\137\022\075\240\010\005\010\266\134$$$  $\label{eq:condition} $$ 245\145\070\004\105\231\036\243\140\140\164\305\101\245\162\142 $$$ \033\142\305\037\157\137\032\102\276\002\121\145\250\256\043\030 \152\374\170\003\251\115\177\200\303\372\253\132\374\241\100\244 \312\031\026\376\262\310\357\136\163\015\356\167\275\232\366\171 \230\274\261\007\147\242\025\015\335\240\130\306\104\173\012\076  $\label{eq:condition} $$ \frac{142\050\137\272\101\007\123\130\317\021\176\070\164\305\370\377}{142\050\137\272\101\007\123\130\317\021\176\070\164\305\370\377}$ \265\151\220\217\204\164\352\227\033\257\002\001\003\243\201\300 \060\201\275\060\035\006\003\125\035\016\004\026\004\024\322\304 \260\322\221\324\114\021\161\263\141\313\075\241\376\335\250\152 \324\343\060\201\215\006\003\125\035\043\004\201\205\060\201\202 \200\024\322\304\260\322\221\324\114\021\161\263\141\313\075\241 \376\335\250\152\324\343\241\147\244\145\060\143\061\013\060\011 \006\003\125\004\006\023\002\125\123\061\041\060\037\006\003\125 \004\012\023\030\124\150\145\040\107\157\040\104\141\144\144\171 \040\107\162\157\165\160\054\040\111\156\143\056\061\061\060\057 \006\003\125\004\013\023\050\107\157\040\104\141\144\144\171\040 \141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\202 \001\000\060\014\006\003\125\035\023\004\005\060\003\001\001\377  $\label{eq:condition} $$ \0.060\0.15\0.06\0.11\0.05\0.06\0.11\0.206\0.367\0.15\0.01\0.01\0.005\0.005\0.003$ \202\001\001\000\062\113\363\262\312\076\221\374\022\306\241\007 \214\216\167\240\063\006\024\134\220\036\030\367\010\246\075\012 \031\371\207\200\021\156\151\344\226\027\060\377\064\221\143\162 \070\356\314\034\001\243\035\224\050\244\061\366\172\304\124\327 \366\345\061\130\003\242\314\316\142\333\224\105\163\265\277\105 \311\044\265\325\202\002\255\043\171\151\215\270\266\115\316\317 \211\236\315\073\332\160\367\176\231\046\040\024\124\045\253\156 \163\205\346\233\041\235\012\154\202\016\250\370\302\014\372\020 \036\154\226\357\207\015\304\017\141\213\255\356\203\053\225\370 \216\222\204\162\071\353\040\352\203\355\203\315\227\156\010\274 \353\116\046\266\163\053\344\323\366\114\376\046\161\342\141\021 \164\112\377\127\032\207\017\165\110\056\317\121\151\027\240\002 \022\141\225\325\321\100\262\020\114\356\304\254\020\103\246\245 \236\012\325\225\142\232\015\317\210\202\305\062\014\344\053\237 \105\346\015\237\050\234\261\271\052\132\127\255\067\017\257\035 \177\333\275\237

```
END
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
# Trust for "Go Daddy Class 2 CA"
# Issuer: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US
# Serial Number: 0 (0x0)
# Subject: OU=Go Daddy Class 2 Certification Authority,O="The Go Daddy Group, Inc.",C=US
# Not Valid Before: Tue Jun 29 17:06:20 2004
# Not Valid After: Thu Jun 29 17:06:20 2034
# Fingerprint (SHA-256):
C3:84:6B:F2:4B:9E:93:CA:64:27:4C:0E:C6:7C:1E:CC:5E:02:4F:FC:AC:D2:D7:40:19:35:0E:81:FE:54:6A:E4
# Fingerprint (SHA1): 27:96:BA:E6:3F:18:01:E2:77:26:1B:A0:D7:77:70:02:8F:20:EE:E4
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Go Daddy Class 2 CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\047\226\272\346\077\030\001\342\167\046\033\240\327\167\160\002
\217\040\356\344
END
CKA CERT MD5 HASH MULTILINE OCTAL
\221\336\006\045\253\332\375\062\027\014\273\045\027\052\204\147
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\143\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$
\041\060\037\006\003\125\004\012\023\030\124\150\145\040\107\157
\040\104\141\144\144\171\040\107\162\157\165\160\054\040\111\156
\label{eq:condition} $$ 143\056\061\060\057\006\003\125\004\013\023\050\107\157\040 $$
\104\141\144\144\171\040\103\154\141\163\163\040\062\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# Certificate "Starfield Class 2 CA"
# Issuer: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US
# Serial Number: 0 (0x0)
```

# Subject: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Not Valid Before: Tue Jun 29 17:39:16 2004

# Not Valid After: Thu Jun 29 17:39:16 2034

# Fingerprint (SHA-256):

14:65:FA:20:53:97:B8:76:FA:A6:F0:A9:95:8E:55:90:E4:0F:CC:7F:AA:4F:B7:C2:C8:67:75:21:FB:5F:B6:58

# Fingerprint (SHA1): AD:7E:1C:28:B0:64:EF:8F:60:03:40:20:14:C3:D0:E3:37:0E:B5:8A

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Starfield Class 2 CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\\ \\ 045\\ \\ 060\\ 043\\ \\ 006\\ \\ 003\\ \\ 125\\ \\ 004\\ \\ 012\\ \\ 023\\ \\ 034\\ \\ 123\\ \\ 164\\ \\ 141\\ \\ 162\\ \\ 146\\ \\ 151$ 

\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163

\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023

\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163

\040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156

\040\101\165\164\150\157\162\151\164\171

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00150\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$ \045\060\043\006\003\125\004\012\023\034\123\164\141\162\146\151 $$ \145\157\154\157\147\151\145\163 $$ \054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023 $$ \040\062\040\103\145\162\164\151\146\151\143\141\164\151\157\156 $$ \040\101\165\164\150\157\162\151\164\171$$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

**END** 

### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\004\017\060\202\002\367\240\003\002\001\002\002\0001\000\\ \060\015\006\011\052\206\110\206\367\015\0001\001\005\005\000\060\\ \150\061\013\060\011\006\003\125\0004\006\023\002\125\123\061\045\\ \060\043\006\003\125\0004\012\023\034\123\164\141\162\146\151\145\\ \154\144\004\012\145\143\150\156\157\154\157\147\151\145\163\054\\ \040\111\156\143\056\061\062\060\060\006\003\125\0004\013\023\051\\ \123\164\141\162\146\151\145\154\144\004\0103\154\141\163\163\040\\ \062\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\\ \101\165\164\150\157\162\151\164\171\060\036\027\015\060\064\060\\ \066\062\071\061\067\063\071\061\066\132\060\150\061\013\060\011\006\\ \003\125\0004\006\023\002\125\123\061\0045\060\0043\006\003\125\000\\ \012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143$ 

\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061 \062\060\060\006\003\125\004\013\023\051\123\164\141\162\146\151 \145\154\144\040\103\154\141\163\163\040\062\040\103\145\162\164 \151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162 \151\164\171\060\202\001\040\060\015\006\011\052\206\110\206\367 \202\001\001\000\267\062\310\376\351\161\246\004\205\255\014\021 \144\337\316\115\357\310\003\030\207\077\241\253\373\074\246\237 \360\303\241\332\324\330\156\053\123\220\373\044\244\076\204\360 \236\350\137\354\345\047\104\365\050\246\077\173\336\340\052\360 \310\257\123\057\236\312\005\001\223\036\217\146\034\071\247\115  $\label{eq:condition} $$ \372\132\266\163\004\045\146\353\167\177\347\131\306\112\231\045 $$$ \024\124\353\046\307\363\177\031\325\060\160\217\257\260\106\052 \377\255\353\051\355\327\237\252\004\207\243\324\371\211\245\064 \137\333\103\221\202\066\331\146\074\261\270\271\202\375\234\072 \076\020\310\073\357\006\145\146\172\233\031\030\075\377\161\121 \053\205\046\222\034\247\002\263\344\077\015\257\010\171\202\270 \066\075\352\234\323\065\263\274\151\312\365\314\235\350\375\144 \215\027\200\063\156\136\112\135\231\311\036\207\264\235\032\300 \325\156\023\065\043\136\337\233\137\075\357\326\367\166\302\352 \076\273\170\015\034\102\147\153\004\330\370\326\332\157\213\362  $\label{eq:condition} $$ 104\240\001\253\002\001\003\243\201\305\060\201\302\060\035\006$ \003\125\035\016\004\026\004\024\277\137\267\321\316\335\037\206 \364\133\125\254\334\327\020\302\016\251\210\347\060\201\222\006  $\label{eq:condition} $$ \03125\035\043\004\201\212\060\201\207\200\024\277\137\267\321 $$$ \316\335\037\206\364\133\125\254\334\327\020\302\016\251\210\347 \241\154\244\152\060\150\061\013\060\011\006\003\125\004\006\023 \002\125\123\061\045\060\043\006\003\125\004\012\023\034\123\164 \141\162\146\151\145\154\144\040\124\145\143\150\156\157\154\157 \147\151\145\163\054\040\111\156\143\056\061\062\060\060\006\003 \125\004\013\023\051\123\164\141\162\146\151\145\154\144\040\103 \154\141\163\163\040\062\040\103\145\162\164\151\146\151\143\141 \164\151\157\156\040\101\165\164\150\157\162\151\164\171\202\001 \000\060\014\006\003\125\035\023\004\005\060\003\001\001\377\060 \015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202 \001\001\000\005\235\077\210\235\321\311\032\125\241\254\151\363 \363\131\332\233\001\207\032\117\127\251\241\171\011\052\333\367  $\label{eq:condition} $$ \057\262\036\314\307\136\152\330\203\207\241\227\357\111\065\076$ \167\006\101\130\142\277\216\130\270\012\147\077\354\263\335\041 \146\037\311\124\372\162\314\075\114\100\330\201\257\167\236\203 \172\273\242\307\365\064\027\216\331\021\100\364\374\054\052\115  $\label{eq:condition} $$ \056\177\247\142\135\056\045\323\000\013\040\032\035\150\371\027$ \270\364\275\213\355\050\131\335\115\026\213\027\203\310\262\145  $\label{eq:condition} $$307\055\172\245\252\274\123\206\155\335\127\244\312\370\040\101$$ \013\150\360\364\373\164\276\126\135\172\171\365\371\035\205\343 \055\225\276\365\161\220\103\314\215\037\232\000\012\207\051\351 

 $\label{eq:condition} $$ \frac{152\\145\\06(250)345\\041\\252\\101\\264\\225\\041\\225\\271\\175\\321\\064\\253\\023\\326\\255\\274\\334\\342\\075\\071\\315\\275\\076\\165\\160\\241\\030\\131\\003\\311\\042\\264\\217\\234\\325\\136\\052\\327\\245\\266\\324\\012\\155\\370\\267\\100\\021\\106\\232\\037\\171\\016\\142\\277\\017\\227\\354\\340\\057\\037\\027\\224$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Starfield Class 2 CA"

# Issuer: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Serial Number: 0 (0x0)

# Subject: OU=Starfield Class 2 Certification Authority,O="Starfield Technologies, Inc.",C=US

# Not Valid Before: Tue Jun 29 17:39:16 2004 # Not Valid After : Thu Jun 29 17:39:16 2034

# Fingerprint (SHA-256):

14:65:FA:20:53:97:B8:76:FA:A6:F0:A9:95:8E:55:90:E4:0F:CC:7F:AA:4F:B7:C2:C8:67:75:21:FB:5F:B6:58

# Fingerprint (SHA1): AD:7E:1C:28:B0:64:EF:8F:60:03:40:20:14:C3:D0:E3:37:0E:B5:8A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Starfield Class 2 CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \255\176\034\050\260\144\357\217\140\003\100\040\024\303\320\343 $$$ 

\067\016\265\212

**END** 

CKA CERT MD5 HASH MULTILINE OCTAL

\062\112\113\273\310\143\151\233\276\164\232\306\335\035\106\044

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\150\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$ 

 $\\ \\045\\ \\060\\ \\043\\ \\006\\ \\003\\ \\125\\ \\004\\ \\012\\ \\023\\ \\034\\ \\123\\ \\164\\ \\141\\ \\162\\ \\146\\ \\151$ 

 $\\ 145 \\ 154 \\ 144 \\ 040 \\ 124 \\ 145 \\ 143 \\ 150 \\ 156 \\ 157 \\ 154 \\ 157 \\ 147 \\ 151 \\ 145 \\ 163$ 

\054\040\111\156\143\056\061\062\060\060\006\003\125\004\013\023

\051\123\164\141\162\146\151\145\154\144\040\103\154\141\163\163

 $\\ \\ 040\\ \\ 062\\ \\ 040\\ \\ 103\\ \\ 145\\ \\ 162\\ \\ 164\\ \\ 151\\ \\ 146\\ \\ 151\\ \\ 143\\ \\ 141\\ \\ 164\\ \\ 151\\ \\ 157\\ \\ 156$ 

 $\label{eq:condition} $$ \040\101\165\164\150\157\162\151\164\171$$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Certificate "DigiCert Assured ID Root CA"

#

# Issuer: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US

# Serial Number:0c:e7:e0:e5:17:d8:46:fe:8f:e5:60:fc:1b:f0:30:39

# Subject: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US

# Not Valid Before: Fri Nov 10 00:00:00 2006

# Not Valid After: Mon Nov 10 00:00:00 2031

# Fingerprint (SHA-256):

3E:90:99:B5:01:5E:8F:48:6C:00:BC:EA:9D:11:1E:E7:21:FA:BA:35:5A:89:BC:F1:DF:69:56:1E:3D:C6:32:5C

# Fingerprint (SHA1): 05:63:B8:63:0D:62:D7:5A:BB:C8:AB:1E:4B:DF:B5:A8:99:B2:4D:43

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert Assured ID Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

\103\143\102\104\040\101\103\103\103\102\143\144\040\111

\122\157\157\164\040\103\101

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00145\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151\103\145\162\164\040\101\163\165\162\145\144\040\111\104\040\122\157\157\164\040\103\101$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\014\347\340\345\027\330\106\376\217\345\140\374\033\360 \060\071

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\044\060\042\006\003\125\004\003\023\033\104\151\147\151\103\145 \162\164\040\101\163\163\165\162\145\144\040\111\104\040\122\157 \157\164\040\103\101\060\036\027\015\060\066\061\061\061\060\060 \060\060\060\060\060\132\027\015\063\061\061\061\061\060\060\060 \060\060\060\060\132\060\145\061\013\060\011\006\003\125\004\006 \023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104 \151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006 \003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145 \162\164\056\143\157\155\061\044\060\042\006\003\125\004\003\023 \033\104\151\147\151\103\145\162\164\040\101\163\163\165\162\145  $\\ 144\\040\\111\\104\\040\\122\\157\\157\\164\\040\\103\\101\\060\\202\\001\\042$  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\001\005\000\003$ \202\001\017\000\060\202\001\012\002\202\001\001\000\255\016\025 \316\344\103\200\134\261\207\363\267\140\371\161\022\245\256\334  $\\ \langle 046 \rangle 224 \rangle 210 \rangle 252 \rangle 364 \rangle 316 \rangle 365 \rangle 040 \rangle 071 \rangle 050 \rangle 130 \rangle 140 \rangle 014 \rangle 370 \rangle 200 \rangle 332$ \251\025\225\062\141\074\265\261\050\204\212\212\334\237\012\014  $\label{eq:condition} $$ \203\027\172\217\220\254\212\347\171\123\134\061\204\052\366\017 $$$ \230\062\066\166\314\336\335\074\250\242\357\152\373\041\362\122 \141\337\237\040\327\037\342\261\331\376\030\144\322\022\133\137 \371\130\030\065\274\107\315\241\066\371\153\177\324\260\070\076 \301\033\303\214\063\331\330\057\030\376\050\017\263\247\203\326 \303\156\104\300\141\065\226\026\376\131\234\213\166\155\327\361 \242\113\015\053\377\013\162\332\236\140\320\216\220\065\306\170 \125\207\040\241\317\345\155\012\310\111\174\061\230\063\154\042 \351\207\320\062\132\242\272\023\202\021\355\071\027\235\231\072 \162\241\346\372\244\331\325\027\061\165\256\205\175\042\256\077 \001\106\206\366\050\171\310\261\332\344\127\027\304\176\034\016 \260\264\222\246\126\263\275\262\227\355\252\247\360\267\305\250 \077\225\026\320\377\241\226\353\010\137\030\167\117\002\003\001 \000\001\243\143\060\141\060\016\006\003\125\035\017\001\001\377  $\\ \\004\\003\\002\\001\\206\\000\\017\\006\\003\\125\\035\\023\\001\\001\\377$ \004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026 \004\024\105\353\242\257\364\222\313\202\061\055\121\213\247\247 \041\235\363\155\310\017\060\037\006\003\125\035\043\004\030\060 \026\200\024\105\353\242\257\364\222\313\202\061\055\121\213\247 \247\041\235\363\155\310\017\060\015\006\011\052\206\110\206\367 \015\001\001\005\005\000\003\202\001\001\000\242\016\274\337\342 \355\360\343\162\163\172\144\224\277\367\162\146\330\062\344\102  $\label{eq:condition} $$ 165\142\256\207\353\362\325\331\336\126\263\237\314\316\024\050 $$$ \271\015\227\140\134\022\114\130\344\323\075\203\111\105\130\227 \065\151\032\250\107\352\126\306\171\253\022\330\147\201\204\337 \177\011\074\224\346\270\046\054\040\275\075\263\050\211\367\137 \377\042\342\227\204\037\351\145\357\207\340\337\301\147\111\263 \135\353\262\011\052\353\046\355\170\276\175\077\053\363\267\046 \065\155\137\211\001\266\111\133\237\001\005\233\253\075\045\301 \314\266\177\302\361\157\206\306\372\144\150\353\201\055\224\353 \102\267\372\214\036\335\142\361\276\120\147\267\154\275\363\361  $\label{eq:condition} $$ \037\153\014\066\007\026\177\067\174\251\133\155\172\361\022\106$ 

 $\label{eq:condition} $$ \140\203\327\047\004\276\113\316\227\276\303\147\052\150\021\337\200\347\014\063\146\277\023\015\024\156\363\177\037\143\020\036\372\215\033\045\155\154\217\245\267\141\001\261\322\243\046\241\020\161\235\255\342\303\371\303\231\121\267\053\007\010\316\056\346\120\262\247\372\012\105\057\242\360\362$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "DigiCert Assured ID Root CA"
- # Issuer: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Serial Number:0c:e7:e0:e5:17:d8:46:fe:8f:e5:60:fc:1b:f0:30:39
- # Subject: CN=DigiCert Assured ID Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Not Valid Before: Fri Nov 10 00:00:00 2006
- # Not Valid After: Mon Nov 10 00:00:00 2031
- # Fingerprint (SHA-256):

3E:90:99:B5:01:5E:8F:48:6C:00:BC:EA:9D:11:1E:E7:21:FA:BA:35:5A:89:BC:F1:DF:69:56:1E:3D:C6:32:5C

# Fingerprint (SHA1): 05:63:B8:63:0D:62:D7:5A:BB:C8:AB:1E:4B:DF:B5:A8:99:B2:4D:43

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert Assured ID Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \005\143\270\143\015\142\327\132\273\310\253\036\113\337\265\250$$ 

\231\262\115\103

**END** 

CKA CERT MD5 HASH MULTILINE OCTAL

\207\316\013\173\052\016\111\000\341\130\161\233\067\250\223\162

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ 162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023$ 

 $\label{eq:condition} $$ \020\167\167\056\144\151\147\151\143\145\162\164\056\143\157$$$ 

 $\label{eq:condition} $$ \frac{155 \cdot 061 \cdot 044 \cdot 060 \cdot 042 \cdot 006 \cdot 003 \cdot 125 \cdot 004 \cdot 003 \cdot 023 \cdot 033 \cdot 104 \cdot 151 \cdot 147 \cdot 151}{147 \cdot 151} $$$ 

\122\157\157\164\040\103\101

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \020\014\347\340\345\027\330\106\376\217\345\140\374\033\360$$ 

\060\071

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Certificate "DigiCert Global Root CA"

#

- # Issuer: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Serial Number:08:3b:e0:56:90:42:46:b1:a1:75:6a:c9:59:91:c7:4a
- # Subject: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Not Valid Before: Fri Nov 10 00:00:00 2006
- # Not Valid After: Mon Nov 10 00:00:00 2031
- # Fingerprint (SHA-256):
- 43:48:A0:E9:44:4C:78:CB:26:5E:05:8D:5E:89:44:B4:D8:4F:96:62:BD:26:DB:25:7F:89:34:A4:43:C7:01:61
- # Fingerprint (SHA1): A8:98:5D:3A:65:E5:E5:C4:B2:D7:D6:6D:40:C6:DD:2F:B1:9C:54:36
- CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "DigiCert Global Root CA"
- CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509
- CKA SUBJECT MULTILINE OCTAL
- $\label{eq:condition} $$ \060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$
- \025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
- \162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
- $\label{eq:condition} $$ \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157 $$$
- \155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
- \040\103\101

**END** 

CKA\_ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000141\0013\006\0011\006\003\125\004\00023\002\125\123\061 $$ \025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145 $$ \162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023 $$ \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157 $$$ 

 $\label{thm:linear_condition} $$ 155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151 $$$ 

\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164 \040\103\101

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\020\010\073\340\126\220\102\106\261\241\165\152\311\131\221\307\112$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061 \040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145 \162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\103 \132\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123 \061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103 \145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013  $\label{eq:condition} $$ \023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143$$ \157\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147  $\label{eq:local_continuity} $$ \frac{151\\103\\145\\162\\164\\040\\107\\154\\157\\142\\141\\154\\040\\122\\157\\157$  $\label{eq:condition} $$ 164\040\103\101\060\202\001\042\060\015\006\011\052\206\110\206$ \367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012  $\label{eq:condition} $$ \002\202\001\000\342\073\341\021\162\336\250\244\323\243\127 $$$ \252\120\242\217\013\167\220\311\242\245\356\022\316\226\133\001 \011\040\314\001\223\247\116\060\267\123\367\103\304\151\000\127 \235\342\215\042\335\207\006\100\000\201\011\316\316\033\203\277 \337\315\073\161\106\342\326\146\307\005\263\166\047\026\217\173 \236\036\225\175\356\267\110\243\010\332\326\257\172\014\071\006  $\label{eq:condition} $$ \frac{145}177\frac{135}037\frac{274}027\frac{370}253\frac{276}356050\frac{327}{164}\frac{177}{172}$$ \170\231\131\205\150\156\134\043\062\113\277\116\300\350\132\155 \343\160\277\167\020\277\374\001\366\205\331\250\104\020\130\062 \251\165\030\325\321\242\276\107\342\047\152\364\232\063\370\111 \010\140\213\324\137\264\072\204\277\241\252\112\114\175\076\317 \117\137\154\166\136\240\113\067\221\236\334\042\346\155\316\024 \032\216\152\313\376\315\263\024\144\027\307\133\051\236\062\277 \362\356\372\323\013\102\324\253\267\101\062\332\014\324\357\370 \201\325\273\215\130\077\265\033\350\111\050\242\160\332\061\004 \335\367\262\026\362\114\012\116\007\250\355\112\075\136\265\177 \243\220\303\257\047\002\003\001\000\001\243\143\060\141\060\016  $\label{eq:condition} $$ \006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017 $$$ \006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060 \035\006\003\125\035\016\004\026\004\024\003\336\120\065\126\321 \114\273\146\360\243\342\033\033\303\227\262\075\321\125\060\037 \006\003\125\035\043\004\030\060\026\200\024\003\336\120\065\126 \321\114\273\146\360\243\342\033\033\303\227\262\075\321\125\060 \015\006\011\052\206\110\206\367\015\001\001\005\005\000\003\202  $\label{eq:condition} $$ \001\000\313\234\067\252\110\023\022\012\372\335\104\234\117 $$$ \122\260\364\337\256\004\365\171\171\010\243\044\030\374\113\053 \204\300\055\271\325\307\376\364\301\037\130\313\270\155\234\172 \164\347\230\051\253\021\265\343\160\240\241\315\114\210\231\223 \214\221\160\342\253\017\034\276\223\251\377\143\325\344\007\140 \323\243\277\235\133\011\361\325\216\343\123\364\216\143\372\077 \247\333\264\146\337\142\146\326\321\156\101\215\362\055\265\352 \167\112\237\235\130\342\053\131\300\100\043\355\055\050\202\105 \076\171\124\222\046\230\340\200\110\250\067\357\360\326\171\140 \026\336\254\350\016\315\156\254\104\027\070\057\111\332\341\105  $\\ \begin{tabular}{l} $0.76 \times 0.52 \times 2.71 \times 0.66 \times 1.23 \times 1.7072 \times 1.20 \times 0.66 \times 3.50 \times 3.04 \times 1.27 \times 1.11 \times 1.54 \times 1.20 \times 1.20$   $\label{eq:condition} $$ \frac{141\041\030\325\004\255\170\074\054\072\200\153\247\353\257\025}{024\351\330\211\301\271\070\154\342\221\154\212\377\144\271\167} $$ \frac{127\060\300\033\044\243\341\334\351\337\107\174\265\264\044}{010\005\060\354\055\275\013\277\105\277\120\271\251\363\353\230} $$ \frac{001\022\255\310\210\306\230\064\137\215\012\074\306\351\325\225}{225\155\336}$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "DigiCert Global Root CA"
- # Issuer: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Serial Number:08:3b:e0:56:90:42:46:b1:a1:75:6a:c9:59:91:c7:4a
- # Subject: CN=DigiCert Global Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Not Valid Before: Fri Nov 10 00:00:00 2006
- # Not Valid After: Mon Nov 10 00:00:00 2031
- # Fingerprint (SHA-256):
- 43:48:A0:E9:44:4C:78:CB:26:5E:05:8D:5E:89:44:B4:D8:4F:96:62:BD:26:DB:25:7F:89:34:A4:43:C7:01:61
- # Fingerprint (SHA1): A8:98:5D:3A:65:E5:E5:C4:B2:D7:D6:6D:40:C6:DD:2F:B1:9C:54:36
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA MODIFIABLE CK BBOOL CK FALSE
- CKA\_LABEL UTF8 "DigiCert Global Root CA"
- CKA CERT SHA1 HASH MULTILINE OCTAL
- \250\230\135\072\145\345\345\304\262\327\326\155\100\306\335\057
- \261\234\124\066

**END** 

## CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$171\344\251\204\015\175\072\226\327\300\117\342\103\114\211\056$$ 

**END** 

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{lem:condition} $$ \000141\0013\006\0011\006\003\125\004\0023\002\125\123\061\025\006\0023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157\142\141\154\040\122\157\157\164$ 

\040\103\101

**END** 

## CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\010\073\340\126\220\102\106\261\241\165\152\311\131\221 \307\112

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

#
# Certificate "DigiCert High Assurance EV Root CA"
#

- # Issuer: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Serial Number:02:ac:5c:26:6a:0b:40:9b:8f:0b:79:f2:ae:46:25:77
- # Subject: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Not Valid Before: Fri Nov 10 00:00:00 2006
- # Not Valid After: Mon Nov 10 00:00:00 2031
- # Fingerprint (SHA-256):
- # Fingerprint (SHA1): 5F:B7:EE:06:33:E2:59:DB:AD:0C:4C:9A:E6:D3:8F:1A:61:C7:DC:25
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "DigiCert High Assurance EV Root CA"
- CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509
- CKA\_SUBJECT MULTILINE\_OCTAL

\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061

 $\label{eq:condition} $$ \025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145$ 

 $\label{eq:condition} $$ 162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023$ 

\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157

\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151

\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141

\156\143\145\040\105\126\040\122\157\157\164\040\103\101

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00154\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061\053\060\051\006\003\125\004\003\023\042\104\151\147\151\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141\156\143\145\040\105\126\040\122\157\157\164\040\103\101$ 

# END

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167 \167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061 \053\060\051\006\003\125\004\003\023\042\104\151\147\151\103\145 \162\164\040\110\151\147\150\040\101\163\163\165\162\141\156\143 \145\040\105\126\040\122\157\157\164\040\103\101\060\036\027\015 \060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006 \156\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167 \056\144\151\147\151\143\145\162\164\056\143\157\155\061\053\060  $\label{eq:condition} $$ \004\003\125\004\003\023\042\104\151\147\151\103\145\162\164$ \040\110\151\147\150\040\101\163\163\165\162\141\156\143\145\040  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001 $$$ \017\000\060\202\001\012\002\202\001\001\000\306\314\345\163\346  $\label{eq:condition} $$ 373\324\273\345\055\055\062\246\337\345\201\077\311\315\045\111$ \266\161\052\303\325\224\064\147\242\012\034\260\137\151\246\100 \261\304\267\262\217\320\230\244\251\101\131\072\323\334\224\326  $\\ \begin{tabular}{l} $0.74\333\164\070\244\112\314\115\045\202\367\112\245\123\022\070\end{tabular}$ \356\363\111\155\161\221\176\143\266\253\246\137\303\244\204\370 \117\142\121\276\370\305\354\333\070\222\343\006\345\010\221\014  $\label{eq:condition} $$ 304 \times 0.50 \times 0.101 \times 3.313 \times 3.313 \times 2.211 \times 0.25 \times 1.76 \times 0.101 \times 3.50 \times 0.277 \times 1.5162 \times 0.101 \times 0$ \011\075\276\072\070\120\133\167\061\033\215\263\307\044\105\232 \247\254\155\000\024\132\004\267\272\023\353\121\012\230\101\101  $\\ \\ 042\\116\\145\\141\\207\\201\\101\\120\\246\\171\\134\\211\\336\\031\\112\\127$ \325\056\346\135\034\123\054\176\230\315\032\006\026\244\150\163 \320\064\004\023\134\241\161\323\132\174\125\333\136\144\341\067 \207\060\126\004\345\021\264\051\200\022\361\171\071\210\242\002 \021\174\047\146\267\210\267\170\362\312\012\250\070\253\012\144  $\label{eq:condition} $$ 302\277\146\135\225\204\301\241\045\036\207\135\032\120\013\040 $$$ \022\314\101\273\156\013\121\070\270\113\313\002\003\001\000\001 \243\143\060\141\060\016\006\003\125\035\017\001\001\377\004\004 \003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005 \060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024 \261\076\303\151\003\370\277\107\001\324\230\046\032\010\002\357 \143\144\053\303\060\037\006\003\125\035\043\004\030\060\026\200  $\label{eq:condition} $$ \024\261\076\303\151\003\370\277\107\001\324\230\046\032\010\002$ \357\143\144\053\303\060\015\006\011\052\206\110\206\367\015\001  $\label{eq:condition} $$ \001\005\000\003\202\001\001\000\034\032\006\227\334\327\234\ .$ \237\074\210\146\006\010\127\041\333\041\107\370\052\147\252\277 \030\062\166\100\020\127\301\212\363\172\331\021\145\216\065\372 \236\374\105\265\236\331\114\061\113\270\221\350\103\054\216\263 \170\316\333\343\123\171\161\326\345\041\224\001\332\125\207\232 \044\144\366\212\146\314\336\234\067\315\250\064\261\151\233\043 \310\236\170\042\053\160\103\343\125\107\061\141\031\357\130\305 \205\057\116\060\366\240\061\026\043\310\347\342\145\026\063\313 \277\032\033\240\075\370\312\136\213\061\213\140\010\211\055\014  $\label{eq:condition} $$ \006\134\122\267\304\371\012\230\321\025\137\237\022\276\174\066\143\070\275\104\244\177\344\046\053\012\304\227\151\015\351\214\342\300\020\127\270\310\166\022\221\125\362\110\151\330\274\052\002\133\017\104\324\040\061\333\364\272\160\046\135\220\140\236\274\113\027\011\057\264\313\036\103\150\311\007\047\301\322\134\367\352\041\271\150\022\234\074\234\277\236\374\200\134\233\143\315\354\107\252\045\047\147\240\067\363\000\202\175\124\327\251\370\351\056\023\243\167\350\037\112$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "DigiCert High Assurance EV Root CA"
- # Issuer: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Serial Number:02:ac:5c:26:6a:0b:40:9b:8f:0b:79:f2:ae:46:25:77
- # Subject: CN=DigiCert High Assurance EV Root CA,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Not Valid Before: Fri Nov 10 00:00:00 2006
- # Not Valid After: Mon Nov 10 00:00:00 2031
- # Fingerprint (SHA-256):
- 74:31:E5:F4:C3:C1:CE:46:90:77:4F:0B:61:E0:54:40:88:3B:A9:A0:1E:D0:0B:A6:AB:D7:80:6E:D3:B1:18:CF
- # Fingerprint (SHA1): 5F:B7:EE:06:33:E2:59:DB:AD:0C:4C:9A:E6:D3:8F:1A:61:C7:DC:25

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA LABEL UTF8 "DigiCert High Assurance EV Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\137\267\356\006\063\342\131\333\255\014\114\232\346\323\217\032 \141\307\334\045

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 324\164\336\127\134\071\262\323\234\205\203\305\300\145\111\212$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\154\061\013\060\011\006\003\125\004\006\023\002\125\123\061

 $\label{eq:condition} $$ \025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145 $$$ 

\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023

 $\label{eq:condition} $$ \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157$$$ 

 $\label{eq:condition} $$ \frac{0.053\\0.051\\0.06\\0.003\\1.25\\0.04\\0.003\\0.23\\0.42\\1.04\\1.51\\1.47\\1.51$ 

\103\145\162\164\040\110\151\147\150\040\101\163\163\165\162\141

 $\label{eq:condition} $$ \frac{156}{143}\frac{040}{105}\frac{040}{122}\frac{157}{157}\frac{040}{103}\frac{101}{101}$$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\020\002\254\134\046\152\013\100\233\217\013\171\362\256\106$$ 

\045\167

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "SwissSign Platinum CA - G2"

#

# Issuer: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

# Serial Number:4e:b2:00:67:0c:03:5d:4f

# Subject: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:36:00 2006

# Not Valid After: Sat Oct 25 08:36:00 2036

# Fingerprint (SHA-256):

3B:22:2E:56:67:11:E9:92:30:0D:C0:B1:5A:B9:47:3D:AF:DE:F8:C8:4D:0C:EF:7D:33:17:B4:C1:82:1D:14:36

# Fingerprint (SHA1): 56:E0:FA:C0:3B:8F:18:23:55:18:E5:D3:11:CA:E8:C2:43:31:AB:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Platinum CA - G2"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\11\061\013\060\011\006\003\125\004\006\023\002\103\110\061$ 

\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123

\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023

 $\label{eq:condition} $$ \032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151$ 

\156\165\155\040\103\101\040\055\040\107\062

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\11\006\003\125\004\006\023\002\103\110\061 $$$ 

\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123

\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003\023

 $\label{eq:condition} $$ \032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151$$ 

 $\label{eq:condition} $$ \frac{156\\165\\155\\040\\103\\101\\040\\055\\040\\107\\062$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\116\262\000\147\014\003\135\117

END

# CKA\_VALUE MULTILINE\_OCTAL

\060\132\027\015\063\066\061\060\062\065\060\070\063\066\060\060 \132\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110 \061\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163 \123\151\147\156\040\101\107\061\043\060\041\006\003\125\004\003 \023\032\123\167\151\163\163\123\151\147\156\040\120\154\141\164  $\label{eq:condition} $$ \frac{151}{156}\frac{165}{155}\frac{040}{103}\frac{040}{055}\frac{040}{107}\frac{062}{060}\frac{002}{002}\frac{042}{042} $$$ \060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003 \202\002\017\000\060\202\002\012\002\202\002\001\000\312\337\242 \002\342\332\370\374\007\026\261\336\140\252\336\226\134\144\037 \307\057\176\317\147\372\104\102\326\166\143\225\256\353\257\162 \040\212\105\107\206\142\170\206\326\040\071\046\364\256\243\375  $\label{eq:condition} $$ \043\347\245\234\265\042\041\031\267\067\223\042\300\120\234\202$ \173\324\325\004\104\134\313\264\302\237\222\276\044\330\173\147  $\\ \langle 042 \rangle 342 \rangle 151 \rangle 137 \rangle 345 \rangle 005 \rangle 170 \rangle 324 \rangle 207 \rangle 331 \rangle 161 \rangle 160 \rangle 063 \rangle 045 \rangle 123 \rangle 264$  $\label{eq:condition} $$ \207\073\051\220\050\066\232\125\104\060\150\244\203\227\177\015 $$$ \036\234\166\377\025\235\140\227\000\215\212\205\003\354\200\276 \352\054\156\020\121\222\314\176\325\243\063\330\326\111\336\130 \052\257\366\026\353\113\173\220\062\227\271\272\235\130\361\370 \127\111\004\036\242\135\006\160\335\161\333\371\335\213\232\033 \214\317\075\243\115\316\313\174\366\273\234\240\372\011\316\043 \142\262\351\015\037\342\162\050\217\237\254\150\040\175\157\073 \250\205\061\011\177\013\307\350\145\351\343\170\016\011\147\060 \213\064\202\373\135\340\314\235\201\155\142\356\010\036\004\054 \116\233\354\376\251\117\137\375\151\170\357\011\037\241\264\277 \372\363\357\220\036\114\005\213\036\352\172\221\172\303\327\345 \373\060\274\154\033\020\130\230\367\032\137\320\051\062\003\023 \106\115\141\152\205\114\122\164\057\006\037\173\021\342\204\227  $\label{eq:condition} $$ 306 \times 31 \times 155 \times 177 \times 327 \times 147 \times 03 \times 176 \times 330 \times 150 \times 330 \times 161 \times 050 \times 132 \times 330 \times 161 \times 150 \times$ \316\335\350\020\024\232\376\155\043\207\156\216\132\160\074\325 \215\011\000\247\252\274\260\061\067\155\310\204\024\036\133\275  $\label{eq:condition} $$ 105\143\040\153\113\164\214\275\333\072\016\301\317\132\026\217 $$$ \245\230\362\166\211\262\023\022\073\013\167\167\254\273\345\074 \051\112\222\162\312\141\032\053\136\114\342\203\164\167\372\065 \110\172\205\115\215\232\123\304\337\170\312\227\221\110\053\105 \053\001\367\034\032\242\355\030\272\012\275\203\372\157\274\215 \127\223\073\324\324\246\316\036\361\240\261\316\253\375\053\050 \232\117\033\327\303\162\333\244\304\277\135\114\365\335\173\226 \151\356\150\200\346\347\230\272\066\267\376\156\355\053\275\040  $\label{eq:condition} $$ 370\145\031\332\125\011\176\045\334\376\141\142\162\371\176\030 $$$  $\label{eq:condition} $$ \002\357\143\264\320\373\257\345\073\143\214\147\217\002\003\001 $$$ \000\001\243\201\254\060\201\251\060\016\006\003\125\035\017\001 \001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  $\label{eq:condition} $$ \001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016 $$$ \004\026\004\024\120\257\314\007\207\025\107\157\070\305\264\145 \321\336\225\252\351\337\234\314\060\037\006\003\125\035\043\004 \030\060\026\200\024\120\257\314\007\207\025\107\157\070\305\264 \145\321\336\225\252\351\337\234\314\060\106\006\003\125\035\040  $\\ \\004\\077\\060\\075\\060\\073\\006\\011\\140\\205\\164\\001\\131\\001\\001\\001\\001$ 

\001\060\056\060\054\006\010\053\006\001\005\005\007\002\001\026 \040\150\164\164\160\072\057\057\162\145\160\157\163\151\164\157  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$  $\label{eq:condition} $$ \0.057\0.06\0.015\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.00$ \003\202\002\001\000\010\205\246\365\026\014\374\104\032\301\143  $\label{eq:condition} $$ 340\371\125\106\010\374\160\034\102\050\226\216\267\305\301\101 $$$ \165\116\011\161\171\345\155\226\312\113\245\210\140\320\060\164  $\label{eq:condition} $$ \270\312\010\334\264\060\236\100\007\026\153\145\225\167\001\256$ \244\267\065\013\201\332\161\025\251\164\027\070\173\130\312\371 \057\373\300\145\166\215\133\001\271\175\336\202\075\144\270\276  $\label{eq:condition} $$ \024\164\243\012\124\323\054\225\030\027\065\365\121\153\077\217 $$$  $\label{eq:condition} $\242\226\141\071\170\153\113\345\246\240\370\123\337\121\020\223$ \142\347\200\057\342\321\340\274\216\066\106\167\063\354\270\373 \216\232\054\211\115\061\021\017\046\236\004\273\267\004\215\013  $\label{eq:condition} $$ \362\271\374\132\235\073\026\267\057\310\230\253\376\212\120\131 $$$ \056\243\073\374\051\135\213\301\113\311\342\212\023\035\261\277 \273\102\035\122\335\116\330\024\136\020\306\061\007\357\161\047 \367\033\071\011\334\202\352\213\263\225\206\136\375\365\332\135 \061\246\340\061\266\224\346\104\111\164\305\026\345\367\037\003 \141\050\305\310\313\022\240\102\113\371\153\210\010\215\264\062 \030\363\165\237\304\177\000\117\005\225\234\243\027\002\303\263 \123\233\252\040\071\051\053\146\372\235\257\136\263\222\322\265  $\label{eq:condition} $$ \246\341\032\371\055\101\151\201\024\264\264\265\355\211\075\316$$ \373\251\235\065\102\104\261\034\024\163\201\317\052\001\065\232  $\label{eq:condition} $$ \051\325\055\217\155\204\337\200\115\127\343\077\305\204\165\332 $$$ \211\306\060\273\353\217\313\042\010\240\256\252\361\003\154\072 \113\115\011\245\016\162\306\126\153\041\102\116\043\045\024\150 \256\166\012\174\014\007\160\144\371\232\057\366\005\071\046\306 \014\217\031\177\103\136\156\364\133\025\057\333\141\135\346\147 \057\077\010\224\371\140\264\230\061\332\164\361\204\223\161\115 \137\373\140\130\321\373\304\301\155\211\242\273\040\037\235\161 \221\313\062\233\023\075\076\175\222\122\065\254\222\224\242\323 \030\302\174\307\352\257\166\005\026\335\147\047\302\176\034\007 \042\041\363\100\012\033\064\007\104\023\302\204\152\216\337\031 \132\277\177\353\035\342\032\070\321\134\257\107\222\153\200\265 \060\245\311\215\330\253\061\201\037\337\302\146\067\323\223\251 \205\206\171\145\322

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "SwissSign Platinum CA - G2"

<sup>#</sup> Issuer: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

<sup>#</sup> Serial Number:4e:b2:00:67:0c:03:5d:4f

<sup>#</sup> Subject: CN=SwissSign Platinum CA - G2,O=SwissSign AG,C=CH

<sup>#</sup> Not Valid Before: Wed Oct 25 08:36:00 2006 # Not Valid After : Sat Oct 25 08:36:00 2036

```
3B:22:2E:56:67:11:E9:92:30:0D:C0:B1:5A:B9:47:3D:AF:DE:F8:C8:4D:0C:EF:7D:33:17:B4:C1:82:1D:14:36
# Fingerprint (SHA1): 56:E0:FA:C0:3B:8F:18:23:55:18:E5:D3:11:CA:E8:C2:43:31:AB:66
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "SwissSign Platinum CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\126\340\372\300\073\217\030\043\125\030\345\323\021\312\350\302
\103\061\253\146
END
CKA CERT MD5 HASH MULTILINE OCTAL
\311\230\047\167\050\036\075\016\025\074\204\000\270\205\003\346
END
CKA ISSUER MULTILINE OCTAL
\060\111\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\label{eq:condition} $$ \frac{151}147\\156\\040\\101\\107\\061\\043\\060\\041\\006\\003\\125\\004\\003\\023
\label{eq:condition} $$ \032\123\167\151\163\163\123\151\147\156\040\120\154\141\164\151
\156\165\155\040\103\101\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\116\262\000\147\014\003\135\117
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS MUST VERIFY TRUST
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "SwissSign Gold CA - G2"
# Issuer: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH
# Serial Number:00:bb:40:1c:43:f5:5e:4f:b0
# Subject: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH
# Not Valid Before: Wed Oct 25 08:30:35 2006
# Not Valid After: Sat Oct 25 08:30:35 2036
# Fingerprint (SHA-256):
62:DD:0B:E9:B9:F5:0A:16:3E:A0:F8:E7:5C:05:3B:1E:CA:57:EA:55:C8:68:8F:64:7C:68:81:F2:C8:35:7B:95
# Fingerprint (SHA1): D8:C5:38:8A:B7:30:1B:1B:6E:D4:7A:E6:45:25:3A:6F:9F:1A:27:61
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SwissSign Gold CA - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

# Fingerprint (SHA-256):

 $\label{eq:condition} $$ \00105\061\013\060\011\006\003\125\004\0023\002\103\110\061\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040\103\101\040\055\040\107\062$ 

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00105\061\013\060\011\006\003\125\004\0023\002\103\110\061\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040\103\101\040\055\040\107\062$ 

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\011\000\273\100\034\103\365\136\117\260 $$$ 

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\272\060\202\003\242\240\003\002\001\002\002\011\000 \273\100\034\103\365\136\117\260\060\015\006\011\052\206\110\206 \367\015\001\001\005\005\000\060\105\061\013\060\011\006\003\125 \004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023  $\label{eq:condition} $$ \014\123\167\151\163\163\123\151\147\156\040\101\107\061\037\060$$$ \035\006\003\125\004\003\023\026\123\167\151\163\163\123\151\147 \156\040\107\157\154\144\040\103\101\040\055\040\107\062\060\036 \027\015\060\066\061\060\062\065\060\070\063\060\063\065\132\027 \015\063\066\061\060\062\065\060\070\063\060\063\065\132\060\105 \023\006\003\125\004\012\023\014\123\167\151\163\163\123\151\147 \156\040\101\107\061\037\060\035\006\003\125\004\003\023\026\123  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \040\055\040\107\062\060\202\002\042\060\015\006\011\052\206\110 \206\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002 \012\002\202\002\001\000\257\344\356\176\213\044\016\022\156\251 \120\055\026\104\073\222\222\134\312\270\135\204\222\102\023\052 \274\145\127\202\100\076\127\044\315\120\213\045\052\267\157\374 \357\242\320\300\037\002\044\112\023\226\217\043\023\346\050\130 \000\243\107\307\006\247\204\043\053\273\275\226\053\177\125\314 \213\301\127\037\016\142\145\017\335\075\126\212\163\332\256\176 \155\272\201\034\176\102\214\040\065\331\103\115\204\372\204\333 \122\054\363\016\047\167\013\153\277\021\057\162\170\237\056\330 \076\346\030\067\132\052\162\371\332\142\220\222\225\312\037\234 \351\263\074\053\313\363\001\023\277\132\317\301\265\012\140\275 \335\265\231\144\123\270\240\226\263\157\342\046\167\221\214\340 \142\020\002\237\064\017\244\325\222\063\121\336\276\215\272\204 \172\140\074\152\333\237\053\354\336\336\001\077\156\115\345\120 \206\313\264\257\355\104\100\305\312\132\214\332\322\053\174\250 \356\276\246\345\012\252\016\245\337\005\122\267\125\307\042\135

\062\152\227\227\143\023\333\311\333\171\066\173\205\072\112\305 \122\211\371\044\347\235\167\251\202\377\125\034\245\161\151\053 \321\002\044\362\263\046\324\153\332\004\125\345\301\012\307\155 \060\067\220\052\344\236\024\063\136\026\027\125\305\133\265\313 \064\211\222\361\235\046\217\241\007\324\306\262\170\120\333\014 \014\013\174\013\214\101\327\271\351\335\214\210\367\243\115\262 \062\314\330\027\332\315\267\316\146\235\324\375\136\377\275\227 \076\051\165\347\176\247\142\130\257\045\064\245\101\307\075\274  $\label{eq:condition} $$ \015\120\312\003\003\017\010\132\037\225\163\170\142\277\257\162$ \024\151\016\245\345\003\016\170\216\046\050\102\360\007\013\142 \040\020\147\071\106\372\251\003\314\004\070\172\146\357\040\203 \265\214\112\126\216\221\000\374\216\134\202\336\210\240\303\342 \150\156\175\215\357\074\335\145\364\135\254\121\357\044\200\256  $\label{eq:condition} $$ \252\126\227\157\371\255\175\332\141\077\230\167\074\245\221\266$$  $\label{eq:condition} $$ \034\214\046\332\145\242\011\155\301\342\124\343\271\312\114\114$ \200\217\167\173\140\232\036\337\266\362\110\036\016\272\116\124 \155\230\340\341\242\032\242\167\120\317\304\143\222\354\107\031 \235\353\346\153\316\301\002\003\001\000\001\243\201\254\060\201 \251\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  $\label{eq:condition} $$ \006\000\17\006\003\125\035\023\001\001\377\004\005\060\003\001 $$$ \001\377\060\035\006\003\125\035\016\004\026\004\024\133\045\173 \226\244\145\121\176\270\071\363\300\170\146\136\350\072\347\360 \173\226\244\145\121\176\270\071\363\300\170\146\136\350\072\347 \360\356\060\106\006\003\125\035\040\004\077\060\075\060\073\006 \011\140\205\164\001\131\001\002\001\001\060\056\060\054\006\010 \053\006\001\005\005\007\002\001\026\040\150\164\164\160\072\057  $\label{eq:condition} $$ \057\162\145\160\157\163\151\164\157\162\171\056\163\167\151\163$ \163\163\151\147\156\056\143\157\155\057\060\015\006\011\052\206 \110\206\367\015\001\001\005\005\000\003\202\002\001\000\047\272 \343\224\174\361\256\300\336\027\346\345\330\325\365\124\260\203 \364\273\315\136\005\173\117\237\165\146\257\074\350\126\176\374 \162\170\070\003\331\053\142\033\000\271\370\351\140\315\314\316 \121\212\307\120\061\156\341\112\176\030\057\151\131\266\075\144 \201\053\343\203\204\346\042\207\216\175\340\356\002\231\141\270 \036\364\270\053\210\022\026\204\302\061\223\070\226\061\246\271 \073\123\077\303\044\223\126\133\151\222\354\305\301\273\070\000 \343\354\027\251\270\334\307\174\001\203\237\062\107\272\122\042  $\label{eq:condition} $$ \064\035\062\172\011\126\247\174\045\066\251\075\113\332\300\202$ \333\137\046\153\122\331\056\212\361\024\306\104\215\025\251\267 \277\275\336\246\032\356\256\055\373\110\167\027\376\273\354\257 \030\365\052\121\360\071\204\227\225\154\156\033\303\053\304\164 \140\171\045\260\012\047\337\337\136\322\071\317\105\175\102\113  $\label{eq:condition} $$ 337 \times 63 \times 305 \times 306 \times 305 \times 312 \times 125 \times 240 \times 34 \times 151 \times 322 \times 17832$ \357\262\260\074\237\207\154\022\053\145\160\025\122\061\032\044 \317\157\061\043\120\037\214\117\217\043\303\164\101\143\034\125 \250\024\335\076\340\121\120\317\361\033\060\126\016\222\260\202

\205\330\203\313\042\144\274\055\270\045\325\124\242\270\006\352 \255\222\244\044\240\301\206\265\112\023\152\107\317\056\013\126 \225\124\313\316\232\333\152\264\246\262\333\101\010\206\047\167 \367\152\240\102\154\013\070\316\327\165\120\062\222\302\337\053 \060\042\110\320\325\101\070\045\135\244\351\135\237\306\224\165 \320\105\375\060\227\103\217\220\253\012\307\206\163\140\112\151 \055\336\245\170\327\006\332\152\236\113\076\167\072\040\023\042  $\label{eq:condition} $$ \001\320\277\150\236\143\140\153\065\115\013\155\272\241\075\300 $$$ \223\340\177\043\263\125\255\162\045\116\106\371\322\026\357\260 \144\301\001\236\351\312\240\152\230\016\317\330\140\362\057\111 \270\344\102\341\070\065\026\364\310\156\117\367\201\126\350\272 \243\276\043\257\256\375\157\003\340\002\073\060\166\372\033\155 \101\317\001\261\351\270\311\146\364\333\046\363\072\244\164\362 \111\044\133\311\260\320\127\301\372\076\172\341\227\311

**END** 

CKA NSS MOZILLA CA POLICY CK BBOOL CK TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA NSS EMAIL DISTRUST AFTER CK BBOOL CK FALSE

# Trust for "SwissSign Gold CA - G2"

# Issuer: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH

# Serial Number:00:bb:40:1c:43:f5:5e:4f:b0

# Subject: CN=SwissSign Gold CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:30:35 2006

# Not Valid After: Sat Oct 25 08:30:35 2036

# Fingerprint (SHA-256):

62:DD:0B:E9:B9:F5:0A:16:3E:A0:F8:E7:5C:05:3B:1E:CA:57:EA:55:C8:68:8F:64:7C:68:81:F2:C8:35:7B:95

# Fingerprint (SHA1): D8:C5:38:8A:B7:30:1B:1B:6E:D4:7A:E6:45:25:3A:6F:9F:1A:27:61

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "SwissSign Gold CA - G2"

CKA CERT SHA1 HASH MULTILINE OCTAL

\330\305\070\212\267\060\033\033\156\324\172\346\105\045\072\157 \237\032\047\141

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\\ \langle 044 \rangle 167 \rangle 331 \rangle 250 \rangle 221 \rangle 321 \rangle 073 \rangle 372 \rangle 210 \rangle 055 \rangle 302 \rangle 377 \rangle 370 \rangle 315 \rangle 063 \rangle 223 \rangle 377 \rangle 370 \rangle 315 \rangle 063 \rangle 223 \rangle 377 \rangle 370 \rangle 315 \rangle 063 \rangle 223 \rangle 377 \rangle 370 \rangle$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\105\061\013\060\011\006\003\125\004\006\023\002\103\110\061$ \025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123 \151\147\156\040\101\107\061\037\060\035\006\003\125\004\003\023 \026\123\167\151\163\163\123\151\147\156\040\107\157\154\144\040 \103\101\040\055\040\107\062

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\002\011\000\273\100\034\103\365\136\117\260
END
```

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "SwissSign Silver CA - G2"

#

# Issuer: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

# Serial Number:4f:1b:d4:2f:54:bb:2f:4b

# Subject: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

# Not Valid Before: Wed Oct 25 08:32:46 2006

# Not Valid After: Sat Oct 25 08:32:46 2036

# Fingerprint (SHA-256):

BE:6C:4D:A2:BB:B9:BA:59:B6:F3:93:97:68:37:42:46:C3:C0:05:99:3F:A9:8F:02:0D:1D:ED:BE:D4:8A:81:D5

# Fingerprint (SHA1): 9B:AA:E5:9F:56:EE:21:CB:43:5A:BE:25:93:DF:A7:F0:40:D1:1D:CB

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SwissSign Silver CA - G2"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061 $$$ 

\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123

 $\label{eq:condition} $$ \frac{151}147\\156\\040\\101\\107\\061\\041\\060\\037\\006\\003\\125\\004\\003\\023$ 

 $\label{eq:condition} $$ \030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145$$ 

\162\040\103\101\040\055\040\107\062

**END** 

CKA\_ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000107\061\013\060\011\006\003\125\004\006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145\162\040\103\101\040\055\040\107\062$ 

END

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\117\033\324\057\124\273\057\113

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:constraint} $$ \000\200\3\245\240\003\002\001\002\002\010\117 $$ \033\324\057\124\273\057\113\060\015\006\011\052\206\110\206\367 $$ \015\001\001\005\005\000\060\107\061\013\060\011\006\003\125\004\\ \006\023\002\103\110\061\025\060\023\006\003\125\004\012\023\014 $$ \123\167\151\163\163\123\151\147\156\040\101\107\061\041\060\037 $$$ 

\006\003\125\004\003\023\030\123\167\151\163\163\123\151\147\156 \040\123\151\154\166\145\162\040\103\101\040\055\040\107\062\060 \036\027\015\060\066\061\060\062\065\060\070\063\062\064\066\132 \027\015\063\066\061\060\062\065\060\070\063\062\064\066\132\060 \107\061\013\060\011\006\003\125\004\006\023\002\103\110\061\025 \060\023\006\003\125\004\012\023\014\123\167\151\163\163\123\151 \147\156\040\101\107\061\041\060\037\006\003\125\004\003\023\030 \123\167\151\163\163\123\151\147\156\040\123\151\154\166\145\162  $\label{eq:condition} $$ \040\103\101\040\055\040\107\062\060\202\002\042\060\015\006\011 $$$ \052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000 \060\202\002\012\002\202\002\001\000\304\361\207\177\323\170\061 \367\070\311\370\303\231\103\274\307\367\274\067\347\116\161\272 \113\217\245\163\035\134\156\230\256\003\127\256\070\067\103\057  $\label{eq:condition} $$ \027\075\037\310\316\150\020\301\170\256\031\003\053\020\372\054$$$ \171\203\366\350\271\150\271\125\362\004\104\247\071\371\374\004 \213\036\361\242\115\047\371\141\173\272\267\345\242\023\266\353 \141\076\320\154\321\346\373\372\136\355\035\264\236\240\065\133 \241\222\313\360\111\222\376\205\012\005\076\346\331\013\342\117 \273\334\225\067\374\221\351\062\065\042\321\037\072\116\047\205 \235\260\025\224\062\332\141\015\107\115\140\102\256\222\107\350 \203\132\120\130\351\212\213\271\135\241\334\335\231\112\037\066 \147\273\110\344\203\266\067\353\110\072\257\017\147\217\027\007  $\label{eq:condition} $$ 350\004\312\357\152\061\207\324\300\266\371\224\161\173\147\144$ \270\266\221\112\102\173\145\056\060\152\014\365\220\356\225\346 \362\315\202\354\331\241\112\354\366\262\113\345\105\205\346\155 \170\223\004\056\234\202\155\066\251\304\061\144\037\206\203\013 \052\364\065\012\170\311\125\317\101\260\107\351\060\237\231\276 \141\250\006\204\271\050\172\137\070\331\033\251\070\260\203\177 \163\301\303\073\110\052\202\017\041\233\270\314\250\065\303\204 \033\203\263\076\276\244\225\151\001\072\211\000\170\004\331\311 \364\231\031\253\126\176\133\213\206\071\025\221\244\020\054\011 \062\200\140\263\223\300\052\266\030\013\235\176\215\111\362\020 \112\177\371\325\106\057\031\222\243\231\247\046\254\273\214\074 \346\016\274\107\007\334\163\121\361\160\144\057\010\371\264\107 \035\060\154\104\352\051\067\205\222\150\146\274\203\070\376\173 \071\056\323\120\360\037\373\136\140\266\251\246\372\047\101\361 \233\030\162\362\365\204\164\112\311\147\304\124\256\110\144\337  $\label{eq:condition} $$ \214\321\156\260\035\341\007\217\010\036\231\234\161\351\114\330 $$$ \245\367\107\022\037\164\321\121\236\206\363\302\242\043\100\013 \163\333\113\246\347\163\006\214\301\240\351\301\131\254\106\372 \346\057\370\317\161\234\106\155\271\304\025\215\070\171\003\105 \110\357\304\135\327\010\356\207\071\042\206\262\015\017\130\103 \367\161\251\110\056\375\352\326\037\002\003\001\000\001\243\201 \254\060\201\251\060\016\006\003\125\035\017\001\001\377\004\004  $\label{eq:condition} $$ \003\002\001\006\060\017\006\003\125\035\023\001\001\377\004\005 $$$ \060\003\001\001\377\060\035\006\003\125\035\016\004\026\004\024 \027\240\315\301\344\101\266\072\133\073\313\105\235\275\034\302 \230\372\206\130\060\037\006\003\125\035\043\004\030\060\026\200

\024\027\240\315\301\344\101\266\072\133\073\313\105\235\275\034 \302\230\372\206\130\060\106\006\003\125\035\040\004\077\060\075 \060\073\006\011\140\205\164\001\131\001\003\001\001\060\056\060 \160\072\057\057\162\145\160\157\163\151\164\157\162\171\056\163 \167\151\163\163\163\151\147\156\056\143\157\155\057\060\015\006 \011\052\206\110\206\367\015\001\001\005\005\000\003\202\002\001 \000\163\306\201\340\047\322\055\017\340\225\060\342\232\101\177 \120\054\137\137\142\141\251\206\152\151\030\014\164\111\326\135 \204\352\101\122\030\157\130\255\120\126\040\152\306\275\050\151 \130\221\334\221\021\065\251\072\035\274\032\245\140\236\330\037  $\label{eq:condition} $$ \frac{177}105\\221\\151\\331\\176\\273\\170\\162\\301\\006\\017\\052\\316\\217\\205$ \160\141\254\240\315\013\270\071\051\126\204\062\116\206\273\075  $\label{eq:condition} $$ 304\052\331\327\037\162\356\376\121\241\042\101\261\161\002\143$  $\label{eq:condition} $$ \032\202\260\142\253\136\127\022\037\337\313\335\165\240\300\135$ \171\220\214\033\340\120\346\336\061\376\230\173\160\137\245\220 \330\255\370\002\266\157\323\140\335\100\113\042\305\075\255\072 \172\237\032\032\107\221\171\063\272\202\334\062\151\003\226\156 \037\113\360\161\376\343\147\162\240\261\277\134\213\344\372\231 \042\307\204\271\033\215\043\227\077\355\045\340\317\145\273\365 \141\004\357\335\036\262\132\101\042\132\241\237\135\054\350\133 \311\155\251\014\014\170\252\140\306\126\217\001\132\014\150\274  $\label{eq:condition} $$ \frac{151}031\frac{304}037\frac{76}227005\frac{277}{305}\frac{351}044\frac{121}{136}\frac{324}{325} $$$ \113\123\355\331\043\132\066\003\145\243\301\003\255\101\060\363 \106\033\205\220\257\145\265\325\261\344\026\133\170\165\035\227 \172\155\131\251\052\217\173\336\303\207\211\020\231\111\163\170 \310\075\275\121\065\164\052\325\361\176\151\033\052\273\073\275  $\\ \langle 045 \rangle 270 \rangle 232 \rangle 132 \rangle 075 \rangle 162 \rangle 141 \rangle 220 \rangle 146 \rangle 207 \rangle 356 \rangle 014 \rangle 326 \rangle 115 \rangle 324 \rangle 021$ \164\013\152\376\013\003\374\243\125\127\211\376\112\313\256\133 \027\005\310\362\215\043\061\123\070\322\055\152\077\202\271\215  $\label{eq:condition} $$ \010\152\367\136\101\164\156\303\021\176\007\254\051\140\221\077$ \070\312\127\020\015\275\060\057\307\245\346\101\240\332\256\005 \207\232\240\244\145\154\114\011\014\211\272\270\323\271\300\223 \212\060\372\215\345\232\153\025\001\116\147\252\332\142\126\076 \204\010\146\322\304\066\175\247\076\020\374\210\340\324\200\345 \000\275\252\363\116\006\243\172\152\371\142\162\343\011\117\353 \233\016\001\043\361\237\273\174\334\334\154\021\227\045\262\362 \264\143\024\322\006\052\147\214\203\365\316\352\007\330\232\152  $\label{eq:condition} $$ \036\354\344\012\273\052\114\353\011\140\071\316\312\142\330\056$$ \156

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "SwissSign Silver CA - G2"

<sup>#</sup> Issuer: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH

<sup>#</sup> Serial Number:4f:1b:d4:2f:54:bb:2f:4b

```
# Subject: CN=SwissSign Silver CA - G2,O=SwissSign AG,C=CH
# Not Valid Before: Wed Oct 25 08:32:46 2006
# Not Valid After: Sat Oct 25 08:32:46 2036
# Fingerprint (SHA-256):
BE:6C:4D:A2:BB:B9:BA:59:B6:F3:93:97:68:37:42:46:C3:C0:05:99:3F:A9:8F:02:0D:1D:ED:BE:D4:8A:81:D5
# Fingerprint (SHA1): 9B:AA:E5:9F:56:EE:21:CB:43:5A:BE:25:93:DF:A7:F0:40:D1:1D:CB
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "SwissSign Silver CA - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\233\252\345\237\126\356\041\313\103\132\276\045\223\337\247\360
\100\321\035\313
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\340\006\241\311\175\317\311\374\015\300\126\165\226\330\142\023
END
CKA_ISSUER MULTILINE_OCTAL
\label{eq:condition} $$ \060\107\061\013\060\011\006\003\125\004\006\023\002\103\110\061\
\025\060\023\006\003\125\004\012\023\014\123\167\151\163\163\123
\151\147\156\040\101\107\061\041\060\037\006\003\125\004\003\023
\label{eq:condition} $$ \030\123\167\151\163\163\123\151\147\156\040\123\151\154\166\145$
\162\040\103\101\040\055\040\107\062
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\010\117\033\324\057\124\273\057\113
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "SecureTrust CA"
# Issuer: CN=SecureTrust CA,O=SecureTrust Corporation,C=US
# Serial Number:0c:f0:8e:5c:08:16:a5:ad:42:7f:f0:eb:27:18:59:d0
# Subject: CN=SecureTrust CA,O=SecureTrust Corporation,C=US
# Not Valid Before: Tue Nov 07 19:31:18 2006
# Not Valid After: Mon Dec 31 19:40:55 2029
# Fingerprint (SHA-256):
F1:C1:B5:0A:E5:A2:0D:D8:03:0E:C9:F6:BC:24:82:3D:D3:67:B5:25:57:59:B4:E7:1B:61:FC:E9:F7:37:5D:73
# Fingerprint (SHA1): 87:82:C6:C3:04:35:3B:CF:D2:96:92:D2:59:3E:7D:44:D9:34:FF:11
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

CKA LABEL UTF8 "SecureTrust CA"

# CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000110061013\\060011006\\0033\\125\\004\\012\\023\\027\\123\\145\\143\\165\\162\\145\\124\\162\\165\\163\\164\\040\\103\\157\\162\\160\\157\\162\\141\\164\\151\\157\\156\\061\\027\\060\\025\\006\\003\\125\\004\\003\\023\\016\\123\\145\\143\\165\\162\\145\\124\\162\\165\\163\\164\\040\\103\\101$ 

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000110061013\060\011\006\003\125\004\006\023\002\125\123\061\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165\162\145\124\162\165\163\164\040\103\101$ 

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\014\360\216\134\010\026\245\255\102\177\360\353\047\030 \131\320

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \0.000\202\0.000\202\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.0000\0.000\0.000\0.000\0.0000\0.000\0.000\0.0000\0.0000\0.0000\0.0000\0.0000\0.0000\0.0000\0.00$ \360\216\134\010\026\245\255\102\177\360\353\047\030\131\320\060 \015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\110 \061\013\060\011\006\003\125\004\006\023\002\125\123\061\040\060 \036\006\003\125\004\012\023\027\123\145\143\165\162\145\124\162  $\label{eq:condition} $$ 165\163\164\040\103\157\162\160\157\162\141\164\151\157\156\061$$ \027\060\025\006\003\125\004\003\023\016\123\145\143\165\162\145 \124\162\165\163\164\040\103\101\060\036\027\015\060\066\061\061  $\label{eq:condition} $$ \060\067\061\071\063\061\061\070\132\027\015\062\071\061\062\063\$ \061\061\071\064\060\065\065\132\060\110\061\013\060\011\006\003 \125\004\006\023\002\125\123\061\040\060\036\006\003\125\004\012 \023\027\123\145\143\165\162\145\124\162\165\163\164\040\103\157 \162\160\157\162\141\164\151\157\156\061\027\060\025\006\003\125 \004\003\023\016\123\145\143\165\162\145\124\162\165\163\164\040 \103\101\060\202\001\042\060\015\006\011\052\206\110\206\367\015 \001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  $\label{eq:condition} $$ \001\000\253\244\201\345\225\315\365\366\024\216\302\117\312 $$$ \324\342\170\225\130\234\101\341\015\231\100\044\027\071\221\063 \146\351\276\341\203\257\142\134\211\321\374\044\133\141\263\340 \021\021\101\034\035\156\360\270\273\370\336\247\201\272\246\110 \306\237\035\275\276\216\251\101\076\270\224\355\051\032\324\216 \322\003\035\003\357\155\015\147\034\127\327\006\255\312\310\365 \376\016\257\146\045\110\004\226\013\135\243\272\026\303\010\117 \321\106\370\024\134\362\310\136\001\231\155\375\210\314\206\250 \301\157\061\102\154\122\076\150\313\363\031\064\337\273\207\030 \126\200\046\304\320\334\300\157\337\336\240\302\221\026\240\144

\021\113\104\274\036\366\347\372\143\336\146\254\166\244\161\243 \354\066\224\150\172\167\244\261\347\016\057\201\172\342\265\162 \206\357\242\153\213\360\017\333\323\131\077\272\162\274\104\044 \234\343\163\263\367\257\127\057\102\046\235\251\164\272\000\122 \362\113\315\123\174\107\013\066\205\016\146\251\010\227\026\064 \127\301\146\367\200\343\355\160\124\307\223\340\056\050\025\131 \207\272\273\002\003\001\000\001\243\201\235\060\201\232\060\023 \006\011\053\006\001\004\001\202\067\024\002\004\006\036\004\000  $\label{eq:condition} $$ 103\000\101\060\013\006\003\125\035\017\004\004\003\002\001\206$ \060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001  $\label{eq:condition} $$ \sqrt{377} \cdot 060 \cdot 035 \cdot 006 \cdot 003 \cdot 125 \cdot 035 \cdot 016 \cdot 004 \cdot 026 \cdot 004 \cdot 024 \cdot 102 \cdot 062 \cdot 266 \cdot 026$ \372\004\375\376\135\113\172\303\375\367\114\100\035\132\103\257 \060\064\006\003\125\035\037\004\055\060\053\060\051\240\047\240  $\\ \langle 045 \rangle 206 \rangle 043 \rangle 150 \rangle 164 \rangle 164 \rangle 160 \rangle 072 \rangle 057 \rangle 057 \rangle 143 \rangle 162 \rangle 154 \rangle 056 \rangle 163 \rangle 145 \rangle 164 \rangle$ \143\165\162\145\164\162\165\163\164\056\143\157\155\057\123\124 \103\101\056\143\162\154\060\020\006\011\053\006\001\004\001\202  $\label{eq:condition} $$ \001\004\003\002\001\000\060\015\006\011\052\206\110\206$ \367\015\001\001\005\005\000\003\202\001\001\000\060\355\117\112 \341\130\072\122\162\133\265\246\243\145\030\246\273\121\073\167 \351\235\352\323\237\134\340\105\145\173\015\312\133\342\160\120 \262\224\005\024\256\111\307\215\101\007\022\163\224\176\014\043 \041\375\274\020\177\140\020\132\162\365\230\016\254\354\271\177  $\label{eq:condition} $$ \frac{335}{172}\frac{323}{323}\frac{34}{364}\frac{377}{210}\frac{151}{102}\frac{251}{005}\frac{161}{310} $$$ \267\254\046\350\056\264\214\152\377\161\334\270\261\337\231\274 \174\041\124\053\344\130\242\273\127\051\256\236\251\243\031\046 \017\231\056\010\260\357\375\151\317\231\032\011\215\343\247\237 \053\311\066\064\173\044\263\170\114\225\027\244\006\046\036\266 \144\122\066\137\140\147\331\234\305\005\164\013\347\147\043\322 \010\374\210\351\256\213\177\341\060\364\067\176\375\306\062\332 \055\236\104\060\060\154\356\007\336\322\064\374\322\377\100\366 \113\364\146\106\006\124\246\362\062\012\143\046\060\153\233\321 \334\213\107\272\341\271\325\142\320\242\240\364\147\005\170\051 \143\032\157\004\326\370\306\114\243\232\261\067\264\215\345\050 \113\035\236\054\302\270\150\274\355\002\356\061

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "SecureTrust CA"
```

<sup>#</sup> Issuer: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

<sup>#</sup> Serial Number:0c:f0:8e:5c:08:16:a5:ad:42:7f:f0:eb:27:18:59:d0

<sup>#</sup> Subject: CN=SecureTrust CA,O=SecureTrust Corporation,C=US

<sup>#</sup> Not Valid Before: Tue Nov 07 19:31:18 2006

<sup>#</sup> Not Valid After: Mon Dec 31 19:40:55 2029

<sup>#</sup> Fingerprint (SHA-256):

F1:C1:B5:0A:E5:A2:0D:D8:03:0E:C9:F6:BC:24:82:3D:D3:67:B5:25:57:59:B4:E7:1B:61:FC:E9:F7:37:5D:73

<sup>#</sup> Fingerprint (SHA1): 87:82:C6:C3:04:35:3B:CF:D2:96:92:D2:59:3E:7D:44:D9:34:FF:11

```
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SecureTrust CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\207\202\306\303\004\065\073\317\322\226\222\322\131\076\175\104
\331\064\377\021
END
CKA CERT MD5 HASH MULTILINE OCTAL
\334\062\303\247\155\045\127\307\150\011\235\352\055\251\242\321
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\110\061\013\060\011\006\003\125\004\006\023\002\125\123\061\
\label{eq:condition} $$ \0040\003\006\003\125\004\012\023\027\123\145\143\165\162\145 
\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157
\156\061\027\060\025\006\003\125\004\003\023\016\123\145\143\165
\162\145\124\162\165\163\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\014\360\216\134\010\026\245\255\102\177\360\353\047\030
\131\320
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Secure Global CA"
# Issuer: CN=Secure Global CA,O=SecureTrust Corporation,C=US
# Serial Number:07:56:22:a4:e8:d4:8a:89:4d:f4:13:c8:f0:f8:ea:a5
# Subject: CN=Secure Global CA,O=SecureTrust Corporation,C=US
# Not Valid Before: Tue Nov 07 19:42:28 2006
# Not Valid After: Mon Dec 31 19:52:06 2029
# Fingerprint (SHA-256):
42:00:F5:04:3A:C8:59:0E:BB:52:7D:20:9E:D1:50:30:29:FB:CB:D4:1C:A1:B5:06:EC:27:F1:5A:DE:7D:AC:69
# Fingerprint (SHA1): 3A:44:73:5A:E5:81:90:1F:24:86:61:46:1E:3B:9C:C4:5F:F5:3A:1B
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Secure Global CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
```

\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157 \156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165 \162\145\040\107\154\157\142\141\154\040\103\101

END CKA ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000112\0013\006\003\125\004\006\023\002\125\123\061\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145\124\162\165\163\164\040\103\157\162\160\157\162\141\164\151\157\156\061\031\060\027\006\003\125\004\003\023\020\123\145\143\165\162\145\040\107\154\157\142\141\154\040\103\101$ 

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

 $\label{eq:condition} $$ \002\020\007\126\042\244\350\324\212\211\115\364\023\310\360\370\352\245$ 

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\274\060\202\002\244\240\003\002\001\002\002\020\007 \126\042\244\350\324\212\211\115\364\023\310\360\370\352\245\060  $\label{eq:condition} $$ \0.015\0.06\0.01\0.05\0.005\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.0000\0.000\0.000\0.0000\0.000\0.0000\0.0000\0.0000\0.0000\0.0000\0.0000\0.0000\0.0000\0.$ \061\013\060\011\006\003\125\004\006\023\002\125\123\061\040\060 \036\006\003\125\004\012\023\027\123\145\143\165\162\145\124\162  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \031\060\027\006\003\125\004\003\023\020\123\145\143\165\162\145 \040\107\154\157\142\141\154\040\103\101\060\036\027\015\060\066 \061\061\060\067\061\071\064\062\062\070\132\027\015\062\071\061 \062\063\061\061\071\065\062\060\066\132\060\112\061\013\060\011 \006\003\125\004\006\023\002\125\123\061\040\060\036\006\003\125 \004\012\023\027\123\145\143\165\162\145\124\162\165\163\164\040 \103\157\162\160\157\162\141\164\151\157\156\061\031\060\027\006  $\label{eq:condition} $$ \003\125\004\003\023\020\123\145\143\165\162\145\040\107\154\157 $$$ \142\141\154\040\103\101\060\202\001\042\060\015\006\011\052\206 \110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202 \001\012\002\202\001\001\000\257\065\056\330\254\154\125\151\006 \161\345\023\150\044\263\117\330\314\041\107\370\361\140\070\211 \211\003\351\275\352\136\106\123\011\334\134\365\132\350\367\105 \052\002\353\061\141\327\051\063\114\316\307\174\012\067\176\017  $\label{eq:condition} $$ \272\062\230\341\035\227\257\217\307\334\311\070\226\363\333\032$ \374\121\355\150\306\320\156\244\174\044\321\256\102\310\226\120 \143\056\340\376\165\376\230\247\137\111\056\225\343\071\063\144 \216\036\244\137\220\322\147\074\262\331\376\101\271\125\247\011 \216\162\005\036\213\335\104\205\202\102\320\111\300\035\140\360 \321\027\054\225\353\366\245\301\222\243\305\302\247\010\140\015 \140\004\020\226\171\236\026\064\346\251\266\372\045\105\071\310 \036\145\371\223\365\252\361\122\334\231\230\075\245\206\032\014 \065\063\372\113\245\004\006\025\034\061\200\357\252\030\153\302 \173\327\332\316\371\063\040\325\365\275\152\063\055\201\004\373 \260\134\324\234\243\342\134\035\343\251\102\165\136\173\324\167

\357\071\124\272\311\012\030\033\022\231\111\057\210\113\375\120 \142\321\163\347\217\172\103\002\003\001\000\001\243\201\235\060 \201\232\060\023\006\011\053\006\001\004\001\202\067\024\002\004  $\label{eq:condition} $$ \006\036\004\000\103\000\101\060\013\006\003\125\035\017\004\004$ \003\002\001\206\060\017\006\003\125\035\023\001\001\377\004\005 \257\104\004\302\101\176\110\203\333\116\071\002\354\354\204\172 \346\316\311\244\060\064\006\003\125\035\037\004\055\060\053\060  $\label{eq:condition} $$ \051\240\047\240\045\206\043\150\164\164\160\072\057\057\143\162 $$$ \154\056\163\145\143\165\162\145\164\162\165\163\164\056\143\157 \155\057\123\107\103\101\056\143\162\154\060\020\006\011\053\006 \052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000  $\label{eq:condition} $$ 143\032\010\100\175\244\136\123\015\167\330\172\256\037\015\013$  $\label{eq:condition} $$ \frac{121}026\\003\\357\\030\\174\\310\\343\\257\\152\\130\\223\\024\\140\\221\\262$ \204\334\210\116\276\071\212\072\363\346\202\211\135\001\067\263 \253\044\244\025\016\222\065\132\112\104\136\116\127\372\165\316 \037\110\316\146\364\074\100\046\222\230\154\033\356\044\106\014 \027\263\122\245\333\245\221\221\317\067\323\157\347\047\010\072  $\label{eq:condition} $$ \frac{31}{037}\frac{072}{247}\frac{30}{134}\frac{027}{317}\frac{171}{077}\frac{344}{247}\frac{323}{046} $$$ \043\235\046\017\130\151\374\107\176\262\320\215\213\223\277\051  $\label{eq:condition} $$ \frac{117}103\\15\\1164\\166\\147\\113\\317\\007\\214\\346\\002\\367\\265\\341\\264$  $\label{eq:condition} $$ 103\265\113\055\024\237\371\334\046\015\277\246\107\164\006\330 $$$ \210\321\072\051\060\204\316\322\071\200\142\033\250\307\127\111 \274\152\125\121\147\025\112\276\065\007\344\325\165\230\067\171 \060\024\333\051\235\154\305\151\314\107\125\242\060\367\314\134 \177\302\303\230\034\153\116\026\200\353\172\170\145\105\242\000  $\label{eq:condition} $$ \032\257\014\015\125\144\064\110\270\222\271\361\264\120\051\362$ \117\043\037\332\154\254\037\104\341\335\043\170\121\133\307\026 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "Secure Global CA"
```

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Secure Global CA"

<sup>#</sup> Issuer: CN=Secure Global CA,O=SecureTrust Corporation,C=US

<sup>#</sup> Serial Number:07:56:22:a4:e8:d4:8a:89:4d:f4:13:c8:f0:f8:ea:a5

<sup>#</sup> Subject: CN=Secure Global CA,O=SecureTrust Corporation,C=US

<sup>#</sup> Not Valid Before: Tue Nov 07 19:42:28 2006

<sup>#</sup> Not Valid After: Mon Dec 31 19:52:06 2029

<sup>#</sup> Fingerprint (SHA-256):

<sup>42:00:</sup>F5:04:3A:C8:59:0E:BB:52:7D:20:9E:D1:50:30:29:FB:CB:D4:1C:A1:B5:06:EC:27:F1:5A:DE:7D:AC:69

<sup>#</sup> Fingerprint (SHA1): 3A:44:73:5A:E5:81:90:1F:24:86:61:46:1E:3B:9C:C4:5F:F5:3A:1B

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\label{eq:condition} $$ \072\104\163\132\345\201\220\037\044\206\141\106\036\073\234\304 $$
\137\365\072\033
END
CKA CERT MD5 HASH MULTILINE OCTAL
\317\364\047\015\324\355\334\145\026\111\155\075\332\277\156\336
END
CKA ISSUER MULTILINE OCTAL
\060\112\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\040\060\036\006\003\125\004\012\023\027\123\145\143\165\162\145
\label{eq:local_
\label{eq:condition} $$ \frac{0000031060027006003125004003023020123145143165}{0000003125004003023020123145143165} $$
\162\145\040\107\154\157\142\141\154\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\007\126\042\244\350\324\212\211\115\364\023\310\360\370
\352\245
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "COMODO Certification Authority"
# Issuer: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester.C=GB
# Serial Number:4e:81:2d:8a:82:65:e0:0b:02:ee:3e:35:02:46:e5:3d
# Subject: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester, C=GB
# Not Valid Before: Fri Dec 01 00:00:00 2006
# Not Valid After: Mon Dec 31 23:59:59 2029
# Fingerprint (SHA-256):
0C:2C:D6:3D:F7:80:6F:A3:99:ED:E8:09:11:6B:57:5B:F8:79:89:F0:65:18:F9:80:8C:86:05:03:17:8B:AF:66
# Fingerprint (SHA1): 66:31:BF:9E:F7:4F:9E:B6:C9:D5:A6:0C:BA:6A:BE:D1:F7:BD:EF:7B
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
```

\040\103\101\040\114\151\155\151\164\145\144\061\047\060\045\006
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171

**END** 

CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000\201\201\006\003\1006\003\125\004\010\023\022\107\162\145\141\164\145\162\061\020\060\03\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060\030\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171$$ 

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\116\201\055\212\202\145\340\013\002\356\076\065\002\106 \345\075

**END** 

### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\004\035\060\202\003\005\240\003\002\001\002\002\002\0116$ \201\055\212\202\145\340\013\002\356\076\065\002\106\345\075\060  $\label{eq:condition} $$ \0.015\0.06\0.011\0.05\0.020\0.060\0.015\0.001\0.005\0.005\0.000\0.060\0.011\0.005\0.005\0.000\0.000\0.001\0.005\0.005\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.0000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.00$ \201\061\013\060\011\006\003\125\004\006\023\002\107\102\061\033 \060\031\006\003\125\004\010\023\022\107\162\145\141\164\145\162  $\label{eq:condition} $$ \040\115\141\156\143\150\145\163\164\145\162\061\020\060\016\006$ \003\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060 \030\006\003\125\004\012\023\021\103\117\115\117\104\117\040\103  $\label{eq:condition} $$ 101\040\114\151\155\151\164\145\144\061\047\060\045\006\003\125 $$$ \004\003\023\036\103\117\115\117\104\117\040\103\145\162\164\151 \146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151 \164\171\060\036\027\015\060\066\061\062\060\061\060\060\060 \060\060\132\027\015\062\071\061\062\063\061\062\063\065\071\065 \071\132\060\201\201\061\013\060\011\006\003\125\004\006\023\002 \107\102\061\033\060\031\006\003\125\004\010\023\022\107\162\145 \141\164\145\162\040\115\141\156\143\150\145\163\164\145\162\061  $\label{eq:condition} $$ \020\060\016\006\003\125\004\007\023\007\123\141\154\146\157\162$$$ \104\117\040\103\101\040\114\151\155\151\164\145\144\061\047\060 \045\006\003\125\004\003\023\036\103\117\115\117\104\117\040\103 \145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164 \150\157\162\151\164\171\060\202\001\042\060\015\006\011\052\206 \110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202 \001\012\002\202\001\001\000\320\100\213\213\162\343\221\033\367 \121\301\033\124\004\230\323\251\277\301\346\212\135\073\207\373 \273\210\316\015\343\057\077\006\226\360\242\051\120\231\256\333

\073\241\127\260\164\121\161\315\355\102\221\115\101\376\251\310 \330\152\206\167\104\273\131\146\227\120\136\264\324\054\160\104  $\label{eq:condition} $$ \frac{317}{332} \frac{067}{225} \frac{102}{151} \frac{074}{060} \frac{304}{161} \frac{263}{122} \frac{360}{041} \frac{115}{241}$ \330\272\071\174\034\236\243\044\235\362\203\026\230\252\026\174 \103\233\025\133\267\256\064\221\376\324\142\046\030\106\232\077 \353\301\371\361\220\127\353\254\172\015\213\333\162\060\152\146 \325\340\106\243\160\334\150\331\377\004\110\211\167\336\265\351 \373\147\155\101\351\274\071\275\062\331\142\002\361\261\250\075  $\label{eq:condition} $$ \frac{0.067}{234}\frac{342}{057}\frac{342}{323}\frac{242}{046}\frac{313}{306}\frac{270}{125}\frac{103}{210}\frac{341}{341} $$$ \043\076\245\322\044\071\152\107\253\000\324\241\263\251\045\376  $\label{eq:condition} $$ \015\077\247\035\272\323\121\301\013\244\332\254\070\357\125\120 $$$  $\\ \\044\\005\\145\\106\\223\\064\\117\\055\\215\\255\\306\\324\\041\\031\\322\\216$ \312\005\141\161\007\163\107\345\212\031\022\275\004\115\316\116  $\label{eq:condition} $$ \234\245\110\254\273\046\367\002\003\001\000\001\243\201\216\060 $$$ \201\213\060\035\006\003\125\035\016\004\026\004\024\013\130\345 \213\306\114\025\067\244\100\251\060\251\041\276\107\066\132\126 \377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001 \006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001 \001\377\060\111\006\003\125\035\037\004\102\060\100\060\076\240  $\\ \\ \langle 074 \rangle 240 \rangle 072 \rangle 206 \rangle 070 \rangle 150 \rangle 164 \rangle 164 \rangle 160 \rangle 072 \rangle 057 \rangle 057 \rangle 143 \rangle 162 \rangle 154 \rangle 056$ \143\157\155\157\144\157\143\141\056\143\157\155\057\103\117\115  $\label{eq:condition} $$ 101\165\164\150\157\162\151\164\171\056\143\162\154\060\015\006$ \011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001  $\label{eq:condition} $$ \000\076\230\236\233\366\033\351\327\071\267\170\256\035\162\030 $$$ \111\323\207\344\103\202\353\077\311\252\365\250\265\357\125\174 \041\122\145\371\325\015\341\154\364\076\214\223\163\221\056\002 \304\116\007\161\157\300\217\070\141\010\250\036\201\012\300\057 \040\057\101\213\221\334\110\105\274\361\306\336\272\166\153\063 \310\000\055\061\106\114\355\347\235\317\210\224\377\063\300\126 \350\044\206\046\270\330\070\070\337\052\153\335\022\314\307\077 \107\027\114\242\302\006\226\011\326\333\376\077\074\106\101\337 \130\342\126\017\074\073\301\034\223\065\331\070\122\254\356\310 \354\056\060\116\224\065\264\044\037\113\170\151\332\362\002\070 \314\225\122\223\360\160\045\131\234\040\147\304\356\371\213\127 \141\364\222\166\175\077\204\215\125\267\350\345\254\325\361\365 \031\126\246\132\373\220\034\257\223\353\345\034\324\147\227\135  $\label{eq:condition} $$ \004\016\276\013\203\246\027\203\271\060\022\240\305\063\025\005$ \271\015\373\307\005\166\343\330\112\215\374\064\027\243\306\041  $\label{eq:condition} $$ \050\276\060\105\061\036\307\170\276\130\141\070\254\073\342\001 $$$ \145

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "COMODO Certification Authority"

<sup>#</sup> Issuer: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater

```
Manchester, C=GB
# Serial Number:4e:81:2d:8a:82:65:e0:0b:02:ee:3e:35:02:46:e5:3d
# Subject: CN=COMODO Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester, C=GB
# Not Valid Before: Fri Dec 01 00:00:00 2006
# Not Valid After: Mon Dec 31 23:59:59 2029
# Fingerprint (SHA-256):
0C:2C:D6:3D:F7:80:6F:A3:99:ED:E8:09:11:6B:57:5B:F8:79:89:F0:65:18:F9:80:8C:86:05:03:17:8B:AF:66
# Fingerprint (SHA1): 66:31:BF:9E:F7:4F:9E:B6:C9:D5:A6:0C:BA:6A:BE:D1:F7:BD:EF:7B
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "COMODO Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\146\061\277\236\367\117\236\266\311\325\246\014\272\152\276\321
\367\275\357\173
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\134\110\334\367\102\162\354\126\224\155\034\314\161\065\200\165
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\201\201\061\013\060\011\006\003\125\004\006\023\002\107\102
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\\ \\ 040\\ \\ 103\\ \\ 101\\ \\ 040\\ \\ 114\\ \\ 151\\ \\ 155\\ \\ 151\\ \\ 164\\ \\ 145\\ \\ 144\\ \\ 061\\ \\ 047\\ \\ 060\\ \\ 045\\ \\ 006
\003\125\004\003\023\036\103\117\115\117\104\117\040\103\145\162
\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157
\162\151\164\171
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\116\201\055\212\202\145\340\013\002\356\076\065\002\106
\345\075
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Network Solutions Certificate Authority"
# Issuer: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US
# Serial Number:57:cb:33:6f:c2:5c:16:e6:47:16:17:e3:90:31:68:e0
# Subject: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US
# Not Valid Before: Fri Dec 01 00:00:00 2006
```

# Not Valid After: Mon Dec 31 23:59:59 2029

# Fingerprint (SHA-256):

15:F0:BA:00:A3:AC:7A:F3:AC:88:4C:07:2B:10:11:A0:77:BD:77:C0:97:F4:01:64:B2:F8:59:8A:BD:83:86:0C

# Fingerprint (SHA1): 74:F8:A3:C3:EF:E7:B3:90:06:4B:83:90:3C:21:64:60:20:E5:DF:CE

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Network Solutions Certificate Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000142\0013\006\003\125\004\0006\023\002\125\123\061\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162\153\040\123\157\156\163\040\114\056\114\056\103\056\061\060\0056\006\003\125\0004\003\023\047\116\145\164\167\157\156\163\040\103\145\162\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171$ 

**END** 

CKA\_ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000142\061\013\060\011\006\003\125\004\006\023\002\125\123\061\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162\153\040\114\056\114\056\114\056\114\056\103\056\061\060\060\056\006\003\125\004\003\023\047\116\145\164\167\157\156\163\040\103\145\162\153\040\123\157\154\165\164\151\157\156\163\040\103\145\162\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171$$ 

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \02\020\127\313\063\157\302\134\026\346\107\026\027\343\220\061\150\340$ 

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\202\003\346\060\202\002\316\240\003\002\001\002\002\020\127 $$ \313\063\157\302\134\026\346\107\026\027\343\220\061\150\340\060 $$ \015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\142 $$ \061\060\003\125\004\006\023\002\125\123\061\041\060 $$ \037\006\003\125\004\003\125\004\003\125\123\164\167\157\162\153\040 $$ \114\056\114\056\114\056\103\056 $$ \061\060\060\056\006\003\125\004\003\023\047\116\145\164\157\156\163\040\103\145\162 $$ \164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151 $$ \164\171\060\036\027\015\060\066\061\062\060\061\062\063\065\071\065 $$ \071\132\060\142\061\013\060\011\006\003\125\004\006\023\002\125 $$ \123\061\041\060\037\006\003\125\004\012\023\030\116\145\164\167 $$ \157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\056 $$ \164\151\157\156\163\040\114\165 $$ \164\151\157\156\163\156\164\151\157\156\163\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\156\164\166\164\166\166\166\166$ 

\114\056\103\056\061\060\060\056\006\003\125\004\003\023\047\116 \145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163 \040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164 \150\157\162\151\164\171\060\202\001\042\060\015\006\011\052\206 \110\206\367\015\001\001\001\005\000\003\202\001\017\000\060\202 \001\012\002\202\001\001\000\344\274\176\222\060\155\306\330\216 \053\013\274\106\316\340\047\226\336\336\371\372\022\323\074\063 \163\263\004\057\274\161\214\345\237\266\042\140\076\137\135\316  $\label{eq:condition} $$ \011\377\202\014\033\232\121\120\032\046\211\335\325\141\135\031 $$$ \334\022\017\055\012\242\103\135\027\320\064\222\040\352\163\317  $\label{eq:condition} $$ \070\054\006\046\011\172\162\367\372\120\062\370\302\223\323\151 $$$ \242\043\316\101\261\314\344\325\037\066\321\212\072\370\214\143 \342\024\131\151\355\015\323\177\153\350\270\003\345\117\152\345 \230\143\151\110\005\276\056\377\063\266\351\227\131\151\370\147  $\label{eq:condition} $$ \031\256\223\141\226\104\025\323\162\260\077\274\152\175\354\110 $$$ \177\215\303\253\252\161\053\123\151\101\123\064\265\260\271\305  $\label{eq:condition} $$ \006\012\304\260\105\365\101\135\156\211\105\173\075\073\046\214 $$$ \164\302\345\322\321\175\262\021\324\373\130\062\042\232\200\311 \334\375\014\351\177\136\003\227\316\073\000\024\207\047\160\070 \251\216\156\263\047\166\230\121\340\005\343\041\253\032\325\205 \042\074\051\265\232\026\305\200\250\364\273\153\060\217\057\106 \002\242\261\014\042\340\323\002\003\001\000\001\243\201\227\060  $\label{eq:condition} $$ \201\224\060\035\006\003\125\035\016\004\026\004\024\041\060\311 $$$ \373\000\327\116\230\332\207\252\052\320\247\056\261\100\061\247 \114\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001 \006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001 \001\377\060\122\006\003\125\035\037\004\113\060\111\060\107\240 \105\240\103\206\101\150\164\164\160\072\057\057\143\162\154\056 \156\145\164\163\157\154\163\163\154\056\143\157\155\057\116\145 \164\167\157\162\153\123\157\154\165\164\151\157\156\163\103\145 \164\171\056\143\162\154\060\015\006\011\052\206\110\206\367\015 \001\001\005\005\000\003\202\001\001\000\273\256\113\347\267\127 \353\177\252\055\267\163\107\205\152\301\344\245\035\344\347\074 \351\364\131\145\167\265\172\133\132\215\045\066\340\172\227\056 \070\300\127\140\203\230\006\203\237\271\166\172\156\120\340\272 \210\054\374\105\314\030\260\231\225\121\016\354\035\270\210\377 \207\120\034\202\302\343\340\062\200\277\240\013\107\310\303\061  $\label{eq:condition} $$ \frac{357}{231}147 \cdot 062 \cdot 200 \cdot 117 \cdot 027 \cdot 041 \cdot 171 \cdot 014 \cdot 151 \cdot 134 \cdot 336 \cdot 136 \cdot 064 \cdot 256$  $\label{eq:condition} $$ \02\265\046\352\120\337\177\030\145\054\311\362\143\341\251\007$ \376\174\161\037\153\063\044\152\036\005\367\005\150\300\152\022 \313\056\136\141\313\256\050\323\176\302\264\146\221\046\137\074 \056\044\137\313\130\017\353\050\354\257\021\226\363\334\173\157 \300\247\210\362\123\167\263\140\136\256\256\050\332\065\054\157  $\\ \\064\\105\\323\\046\\341\\336\\354\\133\\117\\047\\153\\026\\174\\275\\104\\004$ \030\202\263\211\171\027\020\161\075\172\242\026\116\365\001\315 \244\154\145\150\241\111\166\134\103\311\330\274\066\147\154\245 \224\265\324\314\271\275\152\065\126\041\336\330\303\353\373\313

\244\140\114\260\125\240\240\173\127\262 **END** CKA NSS MOZILLA CA POLICY CK BBOOL CK TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE # Trust for "Network Solutions Certificate Authority" # Issuer: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US # Serial Number:57:cb:33:6f:c2:5c:16:e6:47:16:17:e3:90:31:68:e0 # Subject: CN=Network Solutions Certificate Authority,O=Network Solutions L.L.C.,C=US # Not Valid Before: Fri Dec 01 00:00:00 2006 # Not Valid After: Mon Dec 31 23:59:59 2029 # Fingerprint (SHA-256): 15:F0:BA:00:A3:AC:7A:F3:AC:88:4C:07:2B:10:11:A0:77:BD:77:C0:97:F4:01:64:B2:F8:59:8A:BD:83:86:0C # Fingerprint (SHA1): 74:F8:A3:C3:EF:E7:B3:90:06:4B:83:90:3C:21:64:60:20:E5:DF:CE CKA CLASS CK OBJECT CLASS CKO NSS TRUST CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA PRIVATE CK BBOOL CK FALSE CKA MODIFIABLE CK BBOOL CK FALSE CKA\_LABEL UTF8 "Network Solutions Certificate Authority" CKA CERT SHA1 HASH MULTILINE OCTAL \164\370\243\303\357\347\263\220\006\113\203\220\074\041\144\140 \040\345\337\316 **END** CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL \323\363\246\026\300\372\153\035\131\261\055\226\115\016\021\056 **END** CKA\_ISSUER MULTILINE\_OCTAL \060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061 \041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162

 $\label{eq:condition} $$ \000142\001\006\003\125\004\0006\023\002\125\123\061\041\060\037\006\003\125\004\012\023\030\116\145\164\167\157\162\153\040\114\056\114\056\114\056\114\056\103\056\061\060\060\056\006\003\125\004\003\023\047\116\145\164\167\157\162\153\040\123\157\154\165\164\151\157\156\163\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171$$ 

**END** 

 $CKA\_SERIAL\_NUMBER\ MULTILINE\_OCTAL$ 

\002\020\127\313\063\157\302\134\026\346\107\026\027\343\220\061 \150\340

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "COMODO ECC Certification Authority"

#

# Issuer: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater

Manchester.C=GB

# Serial Number:1f:47:af:aa:62:00:70:50:54:4c:01:9e:9b:63:99:2a

# Subject: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater

Manchester, C=GB

# Not Valid Before: Thu Mar 06 00:00:00 2008 # Not Valid After : Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

17:93:92:7A:06:14:54:97:89:AD:CE:2F:8F:34:F7:F0:B6:6D:0F:3A:E3:A3:B8:4D:21:EC:15:DB:BA:4F:AD:C7

# Fingerprint (SHA1): 9F:74:4E:9F:2B:4D:BA:EC:0F:31:2C:50:B6:56:3B:8E:2D:93:C3:11

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "COMODO ECC Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\201\205\006\003\1006\003\125\004\0006\023\002\107\102\006\003\1006\003\125\0004\010\023\022\107\162\145\141\164\145\162\061\020\060\016\0006\003\125\0004\007\023\007\123\141\154\146\157\162\144\061\032\060\030\0006\003\125\0004\012\023\021\103\117\115\117\104\117\040\103\103\103\103\125\0004\003\125\151\164\145\144\061\053\060\051\006\003\125\0004\003\125\0004\003\125\117\115\117\104\117\040\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101$ 

\165\164\150\157\162\151\164\171

END

CKA\_ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:control} $$ \000\201\205\061\013\060\011\006\003\125\004\010\023\022\107\162\145\141\164\145\162\060\031\125\004\010\130\163\164\145\162\164\157\162\144\061\032\060\030\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060\030\125\004\0012\023\021\103\117\115\117\104\117\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171$ 

**END** 

# $CKA\_SERIAL\_NUMBER\ MULTILINE\_OCTAL$

\002\020\037\107\257\252\142\000\160\120\124\114\001\236\233\143 \231\052

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\002\11\060\202\002\017\240\003\002\001\002\002\0037 $$ \107\257\252\142\000\160\120\124\114\001\236\233\143\231\052\060 $$ \012\006\010\052\206\110\316\075\004\003\003\060\201\205\061\013 $$ \060\011\006\003\125\004\006\023\002\107\102\061\033\060\031\006$ 

\003\125\004\010\023\022\107\162\145\141\164\145\162\040\115\141 \156\143\150\145\163\164\145\162\061\020\060\016\006\003\125\004  $\\ \\007\\ \\023\\ \\007\\ \\123\\ \\141\\ \\154\\ \\146\\ \\157\\ \\162\\ \\144\\ \\061\\ \\032\\ \\060\\ \\030\\ \\006\\ \\003$ \151\155\151\164\145\144\061\053\060\051\006\003\125\004\003\023  $\\ \\ \langle 042 \rangle 103 \rangle 117 \rangle 115 \rangle 117 \rangle 104 \rangle 117 \rangle 040 \rangle 105 \rangle 103 \rangle 103 \rangle 040 \rangle 103 \rangle 145 \rangle 162 \rangle 164 \rangle 164$ \151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162 \151\164\171\060\036\027\015\060\070\060\063\060\066\060\060\060  $\label{eq:condition} $$ \060\060\132\027\015\063\070\060\061\061\070\062\063\065\071 $$$ \065\071\132\060\201\205\061\013\060\011\006\003\125\004\006\023  $\label{eq:condition} $$ \002\107\102\061\033\060\031\006\003\125\004\010\023\022\107\162 $$$ \145\141\164\145\162\040\115\141\156\143\150\145\163\164\145\162 \061\020\060\016\006\003\125\004\007\023\007\123\141\154\146\157 \060\051\006\003\125\004\003\023\042\103\117\115\117\104\117\040 \156\040\101\165\164\150\157\162\151\164\171\060\166\060\020\006 \007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003 \142\000\004\003\107\173\057\165\311\202\025\205\373\165\344\221 \026\324\253\142\231\365\076\122\013\006\316\101\000\177\227\341 \372\373\167\212\052\365\003\140\113\066\213\026\043\026\255\011 \161\364\112\364\050\120\264\376\210\034\156\077\154\057\057\011 \131\133\245\133\013\063\231\342\303\075\211\371\152\054\357\262 \323\006\351\243\102\060\100\060\035\006\003\125\035\016\004\026 \004\024\165\161\247\031\110\031\274\235\235\352\101\107\337\224 \304\110\167\231\323\171\060\016\006\003\125\035\017\001\001\377 \004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377 \004\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075  $\\ \langle 004 \rangle 003 \rangle 003 \rangle 150 \rangle 000 \rangle 060 \rangle 145 \rangle 002 \rangle 061 \rangle 000 \rangle 357 \rangle 003 \rangle 133 \rangle 172 \rangle 254$ \267\170\012\162\267\210\337\377\265\106\024\011\012\372\240\346 \175\010\306\032\207\275\030\250\163\275\046\312\140\014\235\316 \231\237\317\134\017\060\341\276\024\061\352\002\060\024\364\223 \074\111\247\063\172\220\106\107\263\143\175\023\233\116\267\157 \030\067\200\123\376\335\040\340\065\232\066\321\307\001\271\346 \334\335\363\377\035\054\072\026\127\331\222\071\326

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "COMODO ECC Certification Authority"

<sup>#</sup> Issuer: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

<sup>#</sup> Serial Number:1f:47:af:aa:62:00:70:50:54:4c:01:9e:9b:63:99:2a

<sup>#</sup> Subject: CN=COMODO ECC Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB

```
# Not Valid Before: Thu Mar 06 00:00:00 2008
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (SHA-256):
17:93:92:7A:06:14:54:97:89:AD:CE:2F:8F:34:F7:F0:B6:6D:0F:3A:E3:A3:B8:4D:21:EC:15:DB:BA:4F:AD:C7
# Fingerprint (SHA1): 9F:74:4E:9F:2B:4D:BA:EC:0F:31:2C:50:B6:56:3B:8E:2D:93:C3:11
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "COMODO ECC Certification Authority"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\label{eq:condition} $$ \237 \ 164 \ 116 \ 237 \ 053 \ 115 \ 272 \ 354 \ 017 \ 061 \ 054 \ 120 \ 266 \ 126 \ 073 \ 216 $$
\055\223\303\021
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\174\142\377\164\235\061\123\136\150\112\325\170\252\036\277\043
END
CKA ISSUER MULTILINE OCTAL
\060\201\205\061\013\060\011\006\003\125\004\006\023\002\107\102
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
\label{eq:condition} $$ \032\060\030\006\003\125\004\012\023\021\103\117\115\117\104\117
\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006
\003\125\004\003\023\042\103\117\115\117\104\117\040\105\103\103
\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101
\165\164\150\157\162\151\164\171
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\037\107\257\252\142\000\160\120\124\114\001\236\233\143
\231\052
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "OISTE WISeKey Global Root GA CA"
# Issuer: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)
2005,O=WISeKev,C=CH
# Serial Number:41:3d:72:c7:f4:6b:1f:81:43:7d:f1:d2:28:54:df:9a
# Subject: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)
2005,O=WISeKey,C=CH
# Not Valid Before: Sun Dec 11 16:03:44 2005
# Not Valid After: Fri Dec 11 16:09:51 2037
# Fingerprint (SHA-256):
```

41:C9:23:86:6A:B4:CA:D6:B7:AD:57:80:81:58:2E:02:07:97:A6:CB:DF:4F:FF:78:CE:83:96:B3:89:37:D7:F5

# Fingerprint (SHA1): 59:22:A1:E1:5A:EA:16:35:21:F8:98:39:6A:46:46:B0:44:1B:0F:A9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "OISTE WISeKey Global Root GA CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:control} $$ \000\201\212\061\013\060\011\006\003\125\004\012\023\007\127\111\123\145\113\145\171\061\033\060\031\25\004\013\023\022\103\157\160\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142\141\154\040\122\157\156\164\040\107\101\040\103\101$ 

CKA\_ID UTF8 "0"

**END** 

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:control_loss} $$ \000\201\212\061\013\060\011\006\003\125\004\012\023\007\127\111\123\145\113\145\171\061\033\060\031\1006\003\125\004\013\023\022\103\157\160\171\162\151\147\150\164\040\050\143\051\040\062\060\060\065\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040\106\157\165\144\141\164\151\157\156\040\105\156\144\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142\141\154\040\122\157\157\164\040\107\101\040\103\101$ 

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\020\101\075\162\307\364\153\037\201\103\175\361\322\050\124\337\232$$ 

**END** 

### CKA VALUE MULTILINE OCTAL

\065\061\062\061\061\061\066\060\063\064\064\132\027\015\063\067 \061\062\061\061\061\066\060\071\065\061\132\060\201\212\061\013 \060\011\006\003\125\004\006\023\002\103\110\061\020\060\016\006 \003\125\004\012\023\007\127\111\123\145\113\145\171\061\033\060 \031\006\003\125\004\013\023\022\103\157\160\171\162\151\147\150 \164\040\050\143\051\040\062\060\060\065\061\042\060\040\006\003 \125\004\013\023\031\117\111\123\124\105\040\106\157\165\156\144 \141\164\151\157\156\040\105\156\144\157\162\163\145\144\061\050  $\label{eq:condition} $$ \004\003\125\004\003\023\037\117\111\123\124\105\040\127\$ \111\123\145\113\145\171\040\107\154\157\142\141\154\040\122\157 \157\164\040\107\101\040\103\101\060\202\001\042\060\015\006\011  $\label{eq:condition} $$ \052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000 $$$ \060\202\001\012\002\202\001\001\000\313\117\263\000\233\075\066 \335\371\321\111\152\153\020\111\037\354\330\053\262\306\370\062 \201\051\103\225\114\232\031\043\041\025\105\336\343\310\034\121 \125\133\256\223\350\067\377\053\153\351\324\352\276\052\335\250 \121\053\327\146\303\141\134\140\002\310\365\316\162\173\073\270 \362\116\145\010\232\315\244\152\031\301\001\273\163\246\327\366 \303\335\315\274\244\213\265\231\141\270\001\242\243\324\115\324  $\label{eq:condition} $$ \005\075\221\255\370\264\010\161\144\257\160\361\034\153\176\366$$$ \303\167\235\044\163\173\344\014\214\341\331\066\341\231\213\005 \231\013\355\105\061\011\312\302\000\333\367\162\240\226\252\225  $\label{eq:condition} $$ \207\320\216\307\266\141\163\015\166\146\214\334\033\264\143\242 $$$ \237\177\223\023\060\361\241\047\333\331\377\054\125\210\221\240 \340\117\007\260\050\126\214\030\033\227\104\216\211\335\340\027 \156\347\052\357\217\071\012\061\204\202\330\100\024\111\056\172 \101\344\247\376\343\144\314\301\131\161\113\054\041\247\133\175 \340\035\321\056\201\233\303\330\150\367\275\226\033\254\160\261 \026\024\013\333\140\271\046\001\005\002\003\001\000\001\243\121 \060\117\060\013\006\003\125\035\017\004\004\003\002\001\206\060  $\label{eq:condition} $$ \0.017\0.06\0.03\1.25\0.035\0.023\0.01\0.01\3.77\0.04\0.05\0.060\0.003\0.01\0.01\3.77$ \060\035\006\003\125\035\016\004\026\004\024\263\003\176\256\066 \274\260\171\321\334\224\046\266\021\276\041\262\151\206\224\060 \020\006\011\053\006\001\004\001\202\067\025\001\004\003\002\001 \000\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000 \003\202\001\001\000\113\241\377\013\207\156\263\371\301\103\261 \110\363\050\300\035\056\311\011\101\372\224\000\034\244\244\253 \111\117\217\075\036\357\115\157\275\274\244\366\362\046\060\311 \020\312\035\210\373\164\031\037\205\105\275\260\154\121\371\066 \176\333\365\114\062\072\101\117\133\107\317\350\013\055\266\304 \031\235\164\305\107\306\073\152\017\254\024\333\074\364\163\234 \251\005\337\000\334\164\170\372\370\065\140\131\002\023\030\174 \274\373\115\260\040\155\103\273\140\060\172\147\063\134\305\231 \321\370\055\071\122\163\373\214\252\227\045\134\162\331\010\036  $\verb|253|116|074|343|201|061|237|003|246|373|300|376|051|210|125|332|$ \204\325\120\003\266\342\204\243\246\066\252\021\072\001\341\030 \113\326\104\150\263\075\371\123\164\204\263\106\221\106\226\000 \267\200\054\266\341\343\020\342\333\242\347\050\217\001\226\142  $\label{eq:condition} $$ \026\076\000\343\034\245\066\201\030\242\114\122\166\300\021\243\156\346\035\272\343\132\276\066\123\305\076\165\217\206\151\051\130\123\265\234\273\157\237\134\305\030\354\335\057\341\230\311\374\276\337\012\015$$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "OISTE WISeKey Global Root GA CA"

# Issuer: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c) 2005,O=WISeKey,C=CH

# Serial Number:41:3d:72:c7:f4:6b:1f:81:43:7d:f1:d2:28:54:df:9a

# Subject: CN=OISTE WISeKey Global Root GA CA,OU=OISTE Foundation Endorsed,OU=Copyright (c)

2005,O=WISeKey,C=CH

# Not Valid Before: Sun Dec 11 16:03:44 2005 # Not Valid After : Fri Dec 11 16:09:51 2037

# Fingerprint (SHA-256):

41:C9:23:86:6A:B4:CA:D6:B7:AD:57:80:81:58:2E:02:07:97:A6:CB:DF:4F:FF:78:CE:83:96:B3:89:37:D7:F5

# Fingerprint (SHA1): 59:22:A1:E1:5A:EA:16:35:21:F8:98:39:6A:46:46:B0:44:1B:0F:A9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "OISTE WISeKey Global Root GA CA"

CKA CERT SHA1 HASH MULTILINE OCTAL

\131\042\241\341\132\352\026\065\041\370\230\071\152\106\106\260

\104\033\017\251

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\274\154\121\063\247\351\323\146\143\124\025\162\033\041\222\223

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\212\061\013\060\011\006\003\125\004\006\023\002\103\110

\061\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113

\145\171\061\033\060\031\006\003\125\004\013\023\022\103\157\160

 $\label{eq:condition} $$ \frac{171}162\times151\times147\times150\times164\times040\times050\times143\times051\times040\times062\times060\times065\times061}$$ 

\042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040

 $\label{eq:condition} $$ 163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111$ 

\123\124\105\040\127\111\123\145\113\145\171\040\107\154\157\142

 $\label{eq:condition} $$ \frac{141\\154\\040\\122\\157\\157\\164\\040\\107\\101\\040\\103\\101$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \020\101\075\162\307\364\153\037\201\103\175\361\322\050\124$$$ 

\337\232

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Certigna"

#

# Issuer: CN=Certigna,O=Dhimyotis,C=FR

# Serial Number:00:fe:dc:e3:01:0f:c9:48:ff

# Subject: CN=Certigna,O=Dhimyotis,C=FR

# Not Valid Before: Fri Jun 29 15:13:05 2007

# Not Valid After: Tue Jun 29 15:13:05 2027

# Fingerprint (SHA-256):

E3:B6:A2:DB:2E:D7:CE:48:84:2F:7A:C5:32:41:C7:B7:1D:54:14:4B:FB:40:C1:1F:3F:1D:0B:42:F5:EE:A1:2D

# Fingerprint (SHA1): B1:2E:13:63:45:86:A4:6F:1A:B2:60:68:37:58:2D:C4:AC:FD:94:97

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certigna"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157

 $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ 

**END** 

CKA\_ID UTF8 "0"

CKA ISSUER MULTILINE OCTAL

\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061

 $\\ \langle 022 \rangle 060 \rangle 020 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 012 \rangle 014 \rangle 011 \rangle 104 \rangle 150 \rangle 151 \rangle 155 \rangle 171 \rangle 157 \rangle$ 

 $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\376\334\343\001\017\311\110\377

**END** 

CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \0.060\202\003\250\060\202\002\220\240\003\002\001\002\002\011\000$ 

 $\label{eq:condition} $$ 376\334\343\001\017\311\110\377\060\015\006\011\052\206\110\206$ 

 $\label{eq:condition} $$ \367\015\001\001\005\000\060\064\061\013\060\011\006\003\125$$ 

\011\104\150\151\155\171\157\164\151\163\061\021\060\017\006\003

\125\004\003\014\010\103\145\162\164\151\147\156\141\060\036\027\015\060\066\066\062\071\061\065\061\063\060\065\132\027\015

10.621.0.671.0.601.0.661.0.621.0.671.0.671.0.621.0.601.0.661.1.221.0.601.0.6

\062\067\060\066\062\071\061\065\061\063\060\065\132\060\064\061 \013\060\011\006\003\125\004\006\023\002\106\122\061\022\060\020

\061\021\060\017\006\003\125\004\003\014\010\103\145\162\164\151 \147\156\141\060\202\001\042\060\015\006\011\052\206\110\206\367 \015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002 \202\001\001\000\310\150\361\311\326\326\263\064\165\046\202\036 \354\264\276\352\134\341\046\355\021\107\141\341\242\174\026\170 \100\041\344\140\236\132\310\143\341\304\261\226\222\377\030\155 \151\043\341\053\142\367\335\342\066\057\221\007\271\110\317\016 \354\171\266\054\347\064\113\160\010\045\243\074\207\033\031\362 \201\007\017\070\220\031\323\021\376\206\264\362\321\136\036\036 \226\315\200\154\316\073\061\223\266\362\240\320\251\225\022\175 \245\232\314\153\310\204\126\212\063\251\347\042\025\123\026\360 \314\027\354\127\137\351\242\012\230\011\336\343\137\234\157\334 \110\343\205\013\025\132\246\272\237\254\110\343\011\262\367\364  $\label{eq:condition} $$ \062\336\136\064\276\034\170\135\102\133\316\016\042\217\115\220 $$$  $\label{eq:condition} $$ 327\175\062\030\263\013\054\152\277\216\077\024\021\211\040\016 $$$ \167\024\265\075\224\010\207\367\045\036\325\262\140\000\354\157  $\label{eq:condition} $$ \052\076\030\143\027\045\077\076\104\040\026\366$$ \046\310\045\256\005\112\264\347\143\054\363\214\026\123\176\134 \373\021\032\010\301\106\142\237\042\270\361\302\215\151\334\372  $\label{eq:condition} $$ \0.072\130\0.06\337\0.02\0.03\0.01\0.00\0.001\243\2.01\2.74\0.60\2.01\2.71\0.60$ \017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377 \060\035\006\003\125\035\016\004\026\004\024\032\355\376\101\071  $\label{eq:condition} $$ \220\264\044\131\276\001\362\122\325\105\366\132\071\334\021\060 $$$ \144\006\003\125\035\043\004\135\060\133\200\024\032\355\376\101 \071\220\264\044\131\276\001\362\122\325\105\366\132\071\334\021 \241\070\244\066\060\064\061\013\060\011\006\003\125\004\006\023 \002\106\122\061\022\060\020\006\003\125\004\012\014\011\104\150 \151\155\171\157\164\151\163\061\021\060\017\006\003\125\004\003 \014\010\103\145\162\164\151\147\156\141\202\011\000\376\334\343 \001\017\311\110\377\060\016\006\003\125\035\017\001\001\377\004  $\label{eq:condition} $$ \004\003\002\001\006\000\021\006\011\140\206\110\001\206\370\102 $$$ \001\001\004\004\003\002\000\007\060\015\006\011\052\206\110\206 \367\015\001\001\005\005\000\003\202\001\001\000\205\003\036\222 \161\366\102\257\341\243\141\236\353\363\300\017\362\245\324\332 \225\346\326\276\150\066\075\176\156\037\114\212\357\321\017\041 \155\136\245\122\143\316\022\370\357\052\332\157\353\067\376\023 \002\307\313\073\076\042\153\332\141\056\177\324\162\075\335\060 \341\036\114\100\031\214\017\327\234\321\203\060\173\230\131\334  $\label{eq:condition} $$ \frac{306}{271}014\\051\\114\\241\\063\\242\\353\\147\\072\\145\\204\\323\\226$ \342\355\166\105\160\217\265\053\336\371\043\326\111\156\074\024 \265\306\237\065\036\120\320\301\217\152\160\104\002\142\313\256 \035\150\101\247\252\127\350\123\252\007\322\006\366\325\024\006 \365\337\124\315\336\346\330\326\011\010\227\143\345\301\056\260 \267\104\046\300\046\300\257\125\060\236\073\325\066\052\031\004 \364\134\036\377\317\054\267\377\320\375\207\100\021\325\021\043 \273\110\300\041\251\244\050\055\375\025\370\260\116\053\364\060 \133\041\374\021\221\064\276\101\357\173\235\227\165\377\227\225

```
END
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
# Trust for "Certigna"
# Issuer: CN=Certigna,O=Dhimyotis,C=FR
# Serial Number:00:fe:dc:e3:01:0f:c9:48:ff
# Subject: CN=Certigna,O=Dhimyotis,C=FR
# Not Valid Before: Fri Jun 29 15:13:05 2007
# Not Valid After: Tue Jun 29 15:13:05 2027
# Fingerprint (SHA-256):
E3:B6:A2:DB:2E:D7:CE:48:84:2F:7A:C5:32:41:C7:B7:1D:54:14:4B:FB:40:C1:1F:3F:1D:0B:42:F5:EE:A1:2D
# Fingerprint (SHA1): B1:2E:13:63:45:86:A4:6F:1A:B2:60:68:37:58:2D:C4:AC:FD:94:97
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certigna"
CKA CERT SHA1 HASH MULTILINE OCTAL
\261\056\023\143\105\206\244\157\032\262\140\150\067\130\055\304
\254\375\224\227
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\253\127\246\133\175\102\202\031\265\330\130\046\050\136\375\377
END
CKA_ISSUER MULTILINE_OCTAL
\060\064\061\013\060\011\006\003\125\004\006\023\002\106\122\061
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\label{eq:condition} $$ 164\151\163\061\021\060\017\006\003\125\004\003\014\010\103\145
\162\164\151\147\156\141
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\011\000\376\334\343\001\017\311\110\377
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "ePKI Root Certification Authority"
# Issuer: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW
# Serial Number:15:c8:bd:65:47:5c:af:b8:97:00:5e:e4:06:d2:bc:9d
# Subject: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW
# Not Valid Before: Mon Dec 20 02:31:27 2004
```

\300\226\130\057\352\273\106\327\273\344\331\056

# Not Valid After: Wed Dec 20 02:31:27 2034

# Fingerprint (SHA-256):

C0:A6:F4:DC:63:A2:4B:FD:CF:54:EF:2A:6A:08:2A:0A:72:DE:35:80:3E:2F:F5:FF:52:7A:E5:D8:72:06:DF:D5

# Fingerprint (SHA1): 67:65:0D:F1:7E:8E:7E:5B:82:40:A4:F4:56:4B:CF:E2:3D:69:C6:F0

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "ePKI Root Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \001360610130660111006003125004006023002124127061 $$ 043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150 $$ 167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040 $$ 114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145 $$ 120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151 $$ 143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171 $$ END$ 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \001360610130660111006003125004006023002124127061 $$ 043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150 $$ 167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040 $$ 114\164\144\056\061\052\060\050\006\003\125\004\013\014\041\145 $$ 120\113\111\040\122\157\157\164\040\103\145\162\164\151\146\151 $$ 143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171 $$ END$ 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \020\025\310\275\145\107\134\257\270\227\000\136\344\006\322\274\235$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\260\060\202\003\230\240\003\002\001\002\002\020\025 \310\275\145\107\134\257\270\227\000\136\344\006\322\274\235\060 \015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\136 \061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060 \041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141 \040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164  $\label{eq:condition} $$ 144\056\061\052\060\050\006\003\125\004\013\014\041\145\120\113$  $\label{eq:condition} $$ \frac{111\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141}{140\151\146\151\143\141} $$$ \164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\036 \027\015\060\064\061\062\062\060\060\060\062\063\061\062\067\132\027 \015\063\064\061\062\062\060\060\062\063\061\062\067\132\060\136 \061\013\060\011\006\003\125\004\006\023\002\124\127\061\043\060 \041\006\003\125\004\012\014\032\103\150\165\156\147\150\167\141 \040\124\145\154\145\143\157\155\040\103\157\056\054\040\114\164 \144\056\061\052\060\050\006\003\125\004\013\014\041\145\120\113 \111\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141

\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202 \002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005 \000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\341 \045\017\356\215\333\210\063\165\147\315\255\037\175\072\116\155 \235\323\057\024\363\143\164\313\001\041\152\067\352\204\120\007 \113\046\133\011\103\154\041\236\152\310\325\003\365\140\151\217 \314\360\042\344\037\347\367\152\042\061\267\054\025\362\340\376 \000\152\103\377\207\145\306\265\032\301\247\114\155\042\160\041 \212\061\362\227\164\211\011\022\046\034\236\312\331\022\242\225 \074\332\351\147\277\010\240\144\343\326\102\267\105\357\227\364 \366\365\327\265\112\025\002\130\175\230\130\113\140\274\315\327 \015\232\023\063\123\321\141\371\172\325\327\170\263\232\063\367 \000\206\316\035\115\224\070\257\250\354\170\121\160\212\134\020 \203\121\041\367\021\075\064\206\136\345\110\315\227\201\202\065 \114\031\354\145\366\153\305\005\241\356\107\023\326\263\041\047 \224\020\012\331\044\073\272\276\104\023\106\060\077\227\074\330  $\label{eq:condition} $$ 327\327\152\356\073\070\343\053\324\227\016\271\033\347\007\111$ \177\067\052\371\167\170\317\124\355\133\106\235\243\200\016\221 \103\301\326\133\137\024\272\237\246\215\044\107\100\131\277\162  $\label{eq:condition} $$ \070\262\066\154\067\377\231\321\135\016\131\012\253\151\367\300 $$$ \262\004\105\172\124\000\256\276\123\366\265\347\341\370\074\243 \061\322\251\376\041\122\144\305\246\147\360\165\007\006\224\024  $\label{eq:condition} $$ \201\125\306\047\344\001\217\027\301\152\161\327\276\113\373\224 $$$ \130\175\176\021\063\261\102\367\142\154\030\326\317\011\150\076 \177\154\366\036\217\142\255\245\143\333\011\247\037\042\102\101  $\label{eq:condition} $$ \036\157\231\212\076\327\371\077\100\172\171\260\245\001\222\322$ \235\075\010\025\245\020\001\055\263\062\166\250\225\015\263\172  $\label{eq:condition} $$ \232\373\007\020\170\021\157\341\217\307\272\017\045\032\164\052$$ \345\034\230\101\231\337\041\207\350\225\006\152\012\263\152\107 \166\145\366\072\317\217\142\027\031\173\012\050\315\032\322\203  $\label{eq:condition} $$ \036\041\307\054\277\276\377\141\150\267\147\033\273\170\115\215$$ \316\147\345\344\301\216\267\043\146\342\235\220\165\064\230\251 \066\053\212\232\224\271\235\354\314\212\261\370\045\211\134\132 \266\057\214\037\155\171\044\247\122\150\303\204\065\342\146\215 \143\016\045\115\325\031\262\346\171\067\247\042\235\124\061\002 \003\001\000\001\243\152\060\150\060\035\006\003\125\035\016\004 \026\004\024\036\014\367\266\147\362\341\222\046\011\105\300\125 \071\056\167\077\102\112\242\060\014\006\003\125\035\023\004\005  $\label{eq:condition} $$ \000\001\001\377\060\071\006\004\147\052\007\000\004\061\060 $$$ \057\060\055\002\001\000\060\011\006\005\053\016\003\002\032\005 \000\060\007\006\005\147\052\003\000\000\004\024\105\260\302\307 \012\126\174\356\133\170\014\225\371\030\123\301\246\034\330\020 \060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003 \202\002\001\000\011\263\203\123\131\001\076\225\111\271\361\201 \272\371\166\040\043\265\047\140\164\324\152\231\064\136\154\000 \123\331\237\362\246\261\044\007\104\152\052\306\245\216\170\022 \350\107\331\130\033\023\052\136\171\233\237\012\052\147\246\045  $\label{eq:condition} $$ \077\006\151\126\163\303\212\146\110\373\051\201\127\164\006\312 $$$ 

\234\352\050\350\070\147\046\053\361\325\265\077\145\223\370\066 \135\216\215\215\100\040\207\031\352\357\047\300\075\264\071\017  $\\ \\045\\173\\150\\120\\164\\125\\234\\014\\131\\175\\132\\075\\101\\224\\045\\122$  $\label{eq:condition} $$ \010\340\107\054\025\061\031\325\277\007\125\306\273\022\265\227 $$$ \364\137\203\205\272\161\301\331\154\201\021\166\012\012\260\277  $\label{eq:condition} $$ \202\227\367\352\075\372\372\354\055\251\050\224\073\126\335\322 $$$ \121\056\256\300\275\010\025\214\167\122\064\226\326\233\254\323 \035\216\141\017\065\173\233\256\071\151\013\142\140\100\040\066 \217\257\373\066\356\055\010\112\035\270\277\233\134\370\352\245 \033\240\163\246\330\370\156\340\063\004\137\150\252\047\207\355 \331\301\220\234\355\275\343\152\065\257\143\337\253\030\331\272 \346\351\112\352\120\212\017\141\223\036\342\055\031\342\060\224 \065\222\135\016\266\007\257\031\200\217\107\220\121\113\056\115 \335\205\342\322\012\122\012\027\232\374\032\260\120\002\345\001 \243\143\067\041\114\104\304\233\121\231\021\016\163\234\006\217 \124\056\247\050\136\104\071\207\126\055\067\275\205\104\224\341  $\label{eq:condition} $$ \014\113\054\234\303\222\205\064\141\313\017\270\233\112\103\122$ \376\064\072\175\270\351\051\334\166\251\310\060\370\024\161\200 \306\036\066\110\164\042\101\134\207\202\350\030\161\213\101\211  $\label{eq:condition} $$ 104\347\176\130\133\250\270\215\023\351\247\154\303\107\355\263$ \032\235\142\256\215\202\352\224\236\335\131\020\303\255\335\342 \115\343\061\325\307\354\350\362\260\376\222\036\026\012\032\374 \331\363\370\047\266\311\276\035\264\154\144\220\177\364\344\304 \133\327\067\256\102\016\335\244\032\157\174\210\124\305\026\156  $\label{eq:condition} $$ \frac{341}172\\150\\056\\370\\072\\277\\015\\244\\074\\211\\073\\170\\247\\116\\143$ \203\004\041\010\147\215\362\202\111\320\133\375\261\315\017\203  $\label{eq:condition} $$ \204\324\076\040\205\367\112\075\053\234\375\052\012\011\115\352 $$$ \201\370\021\234

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "ePKI Root Certification Authority"
- # Issuer: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW
- # Serial Number:15:c8:bd:65:47:5c:af:b8:97:00:5e:e4:06:d2:bc:9d
- # Subject: OU=ePKI Root Certification Authority,O="Chunghwa Telecom Co., Ltd.",C=TW
- # Not Valid Before: Mon Dec 20 02:31:27 2004
- # Not Valid After: Wed Dec 20 02:31:27 2034
- # Fingerprint (SHA-256):

# Fingerprint (SHA1): 67:65:0D:F1:7E:8E:7E:5B:82:40:A4:F4:56:4B:CF:E2:3D:69:C6:F0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ePKI Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\147\145\015\361\176\216\176\133\202\100\244\364\126\113\317\342
\075\151\306\360
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\033\056\000\312\046\006\220\075\255\376\157\025\150\323\153\263
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\136\061\013\060\011\006\003\125\004\006\023\002\124\127\061 $$
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040
\label{eq:local_
\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\025\310\275\145\107\134\257\270\227\000\136\344\006\322
\274\235
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "certSIGN ROOT CA"
# Issuer: OU=certSIGN ROOT CA,O=certSIGN,C=RO
# Serial Number: 20:06:05:16:70:02
# Subject: OU=certSIGN ROOT CA,O=certSIGN,C=RO
# Not Valid Before: Tue Jul 04 17:20:04 2006
# Not Valid After: Fri Jul 04 17:20:04 2031
# Fingerprint (SHA-256):
EA:A9:62:C4:FA:4A:6B:AF:EB:E4:15:19:6D:35:1C:CD:88:8D:4F:53:F3:FA:8A:E6:D7:C4:66:A9:4E:60:42:BB
# Fingerprint (SHA1): FA:B7:EE:36:97:26:62:FB:2D:B0:2A:F6:BF:03:FD:E8:7C:4B:2F:9B
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "certSIGN ROOT CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061 $$
\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111
\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162
\164\123\111\107\116\040\122\117\117\124\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
```

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\006\040\006\005\026\160\002

**END** 

## CKA VALUE MULTILINE OCTAL

\060\202\003\070\060\202\002\040\240\003\002\001\002\002\006\040 \006\005\026\160\002\060\015\006\011\052\206\110\206\367\015\001  $\label{eq:condition} $$ \001\005\000\000\003\125\000\000\003\125\000\000\0023$ \002\122\117\061\021\060\017\006\003\125\004\012\023\010\143\145 \162\164\123\111\107\116\061\031\060\027\006\003\125\004\013\023  $\label{eq:condition} $$ \020\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103$ \101\060\036\027\015\060\066\060\067\060\064\061\067\062\060\060 \064\132\027\015\063\061\060\067\060\064\061\067\062\060\064 \132\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117 \061\021\060\017\006\003\125\004\012\023\010\143\145\162\164\123 \162\164\123\111\107\116\040\122\117\117\124\040\103\101\060\202 \001\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  $\label{eq:condition} $$ \000\003\202\001\017\000\060\202\001\012\002\202\001\001\000\267 $$$ \063\271\176\310\045\112\216\265\333\264\050\033\252\127\220\350 \321\042\323\144\272\323\223\350\324\254\206\141\100\152\140\127 \150\124\204\115\274\152\124\002\005\377\337\233\232\052\256\135 \007\217\112\303\050\177\357\373\053\372\171\361\307\255\360\020 \123\044\220\213\146\311\250\210\253\257\132\243\000\351\276\272 \106\356\133\163\173\054\027\202\201\136\142\054\241\002\145\263 \275\305\053\000\176\304\374\003\063\127\015\355\342\372\316\135 \105\326\070\315\065\266\262\301\320\234\201\112\252\344\262\001 \134\035\217\137\231\304\261\255\333\210\041\353\220\010\202\200 \363\060\243\103\346\220\202\256\125\050\111\355\133\327\251\020 \070\016\376\217\114\133\233\106\352\101\365\260\010\164\303\320 \210\063\266\174\327\164\337\334\204\321\103\016\165\071\241\045 \100\050\352\170\313\016\054\056\071\235\214\213\156\026\034\057 \046\202\020\342\343\145\224\012\004\300\136\367\135\133\370\020 \342\320\272\172\113\373\336\067\000\000\032\133\050\343\322\234 \163\076\062\207\230\241\311\121\057\327\336\254\063\263\117\002 \001\377\004\005\060\003\001\001\377\060\016\006\003\125\035\017 \001\001\377\004\004\003\002\001\306\060\035\006\003\125\035\016 \004\026\004\024\340\214\233\333\045\111\263\361\174\206\326\262 \102\207\013\320\153\240\331\344\060\015\006\011\052\206\110\206  $\label{eq:condition} $$ 367 \times 0.05 \times 0.00 \times 0.00$ \056\065\374\370\165\335\346\177\145\210\364\162\114\311\054\327 \062\116\363\335\031\171\107\275\216\073\133\223\017\120\111\044 \023\153\024\006\162\357\011\323\241\241\343\100\204\311\347\030

 $\label{eq:control_loss} $$ \ensuremath{$\langle 062 \ 164 \ 074 \ 110 \ 156 \ 017 \ 237 \ 113 \ 324 \ 367 \ 036 \ 323 \ 223 \ 206 \ 144 \ 124 \ 227 \ 143 \ 162 \ 120 \ 325 \ 125 \ 317 \ 372 \ 040 \ 223 \ 002 \ 242 \ 233 \ 303 \ 043 \ 223 \ 116 \ 026 \ 125 \ 166 \ 240 \ 160 \ 171 \ 155 \ 315 \ 041 \ 037 \ 317 \ 057 \ 055 \ 274 \ 031 \ 343 \ 210 \ 061 \ 370 \ 131 \ 032 \ 201 \ 011 \ 310 \ 227 \ 246 \ 164 \ 307 \ 140 \ 304 \ 133 \ 314 \ 127 \ 216 \ 262 \ 165 \ 375 \ 033 \ 002 \ 011 \ 333 \ 131 \ 157 \ 162 \ 223 \ 151 \ 367 \ 061 \ 101 \ 326 \ 210 \ 070 \ 277 \ 207 \ 262 \ 275 \ 026 \ 171 \ 371 \ 252 \ 344 \ 276 \ 210 \ 045 \ 335 \ 141 \ 047 \ 043 \ 034 \ 265 \ 061 \ 007 \ 004 \ 066 \ 264 \ 032 \ 220 \ 275 \ 240 \ 164 \ 161 \ 120 \ 211 \ 155 \ 274 \ 024 \ 343 \ 017 \ 206 \ 256 \ 361 \ 253 \ 076 \ 307 \ 240 \ 011 \ 314 \ 243 \ 110 \ 321 \ 340 \ 333 \ 144 \ 347 \ 222 \ 265 \ 317 \ 257 \ 162 \ 103 \ 160 \ 213 \ 371 \ 303 \ 204 \ 074 \ 023 \ 252 \ 176 \ 222 \ 233 \ 127 \ 123 \ 223 \ 372 \ 160 \ 302 \ 221 \ 016 \ 061 \ 371 \ 233 \ 147 \ 135 \ 351 \ 226 \ 070 \ 136 \ 137 \ 263 \ 163 \ 116 \ 210 \ 025 \ 147 \ 336 \ 236 \ 166 \ 020 \ 142 \ 040 \ 276 \ 125 \ 151 \ 225 \ 103 \ 000 \ 071 \ 115 \ 366 \ 356 \ 260 \ 132 \ 116 \ 111 \ 104 \ 124 \ 130 \ 137 \ 102 \ 203$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "certSIGN ROOT CA"

# Issuer: OU=certSIGN ROOT CA,O=certSIGN,C=RO

# Serial Number: 20:06:05:16:70:02

# Subject: OU=certSIGN ROOT CA,O=certSIGN,C=RO

# Not Valid Before: Tue Jul 04 17:20:04 2006 # Not Valid After : Fri Jul 04 17:20:04 2031

# Fingerprint (SHA-256):

EA:A9:62:C4:FA:4A:6B:AF:EB:E4:15:19:6D:35:1C:CD:88:8D:4F:53:F3:FA:8A:E6:D7:C4:66:A9:4E:60:42:BB

# Fingerprint (SHA1): FA:B7:EE:36:97:26:62:FB:2D:B0:2A:F6:BF:03:FD:E8:7C:4B:2F:9B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "certSIGN ROOT CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 372\267\356\066\227\046\142\373\055\260\052\366\277\003\375\350 $$$ 

\174\113\057\233

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\030\230\300\326\351\072\374\371\260\365\014\367\113\001\104\027

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\073\061\013\060\011\006\003\125\004\006\023\002\122\117\061 \021\060\017\006\003\125\004\012\023\010\143\145\162\164\123\111

\107\116\061\031\060\027\006\003\125\004\013\023\020\143\145\162

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\006\040\006\005\026\160\002

**END** 

CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE # # Certificate "NetLock Arany (Class Gold) Ftanúsítvány" # Issuer: CN=NetLock Arany (Class Gold) F..tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification Services),O=NetLock Kft.,L=Budapest,C=HU # Serial Number:49:41:2c:e4:00:10 # Subject: CN=NetLock Arany (Class Gold) F..tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification Services),O=NetLock Kft.,L=Budapest,C=HU # Not Valid Before: Thu Dec 11 15:08:21 2008 # Not Valid After: Wed Dec 06 15:08:21 2028 # Fingerprint (SHA-256): 6C:61:DA:C3:A2:DE:F0:31:50:6B:E0:36:D2:A6:FE:40:19:94:FB:D1:3D:F9:C8:D4:66:59:92:74:C4:46:EC:98 # Fingerprint (SHA1): 06:08:3F:59:3F:15:A1:04:A0:69:A4:6B:A9:03:D0:06:B7:97:09:91 CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA PRIVATE CK BBOOL CK FALSE CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE CKA\_LABEL UTF8 "NetLock Arany (Class Gold) Ftanúsítvány" CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509 CKA\_SUBJECT MULTILINE\_OCTAL \060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125 \061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160 \164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003 \125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303 \241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164 \151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143 \145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145 \164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141 \163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303 \272\163\303\255\164\166\303\241\156\171 **END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125$ \061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160 \164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003 \125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303 \241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164 \151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143 \145\163\051\061\065\060\063\006\003\125\004\003\014\054\116\145 \164\114\157\143\153\040\101\162\141\156\171\040\050\103\154\141

\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303 \272\163\303\255\164\166\303\241\156\171

**END** 

CKA SERIAL NUMBER MULTILINE OCTAL

\002\006\111\101\054\344\000\020

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\025\060\202\002\375\240\003\002\001\002\002\006\111 \101\054\344\000\020\060\015\006\011\052\206\110\206\367\015\001 \001\013\005\000\060\201\247\061\013\060\011\006\003\125\004\006 \023\002\110\125\061\021\060\017\006\003\125\004\007\014\010\102 \165\144\141\160\145\163\164\061\025\060\023\006\003\125\004\012 \014\014\116\145\164\114\157\143\153\040\113\146\164\056\061\067 \060\065\006\003\125\004\013\014\056\124\141\156\303\272\163\303 \255\164\166\303\241\156\171\153\151\141\144\303\263\153\040\050 \103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145 \162\166\151\143\145\163\051\061\065\060\063\006\003\125\004\003 \014\054\116\145\164\114\157\143\153\040\101\162\141\156\171\040 \050\103\154\141\163\163\040\107\157\154\144\051\040\106\305\221 \164\141\156\303\272\163\303\255\164\166\303\241\156\171\060\036 \027\015\060\070\061\062\061\061\061\065\060\070\062\061\132\027 \015\062\070\061\062\060\066\061\065\060\070\062\061\132\060\201 \060\017\006\003\125\004\007\014\010\102\165\144\141\160\145\163 \164\061\025\060\023\006\003\125\004\012\014\014\116\145\164\114 \157\143\153\040\113\146\164\056\061\067\060\065\006\003\125\004 \013\014\056\124\141\156\303\272\163\303\255\164\166\303\241\156 \171\153\151\141\144\303\263\153\040\050\103\145\162\164\151\146 \151\143\141\164\151\157\156\040\123\145\162\166\151\143\145\163 \051\061\065\060\063\006\003\125\004\003\014\054\116\145\164\114  $\label{eq:condition} $$ \frac{157}143\times153\times040\times101\times162\times141\times156\times171\times040\times050\times103\times154\times141\times163\times163}{163} $$$ \040\107\157\154\144\051\040\106\305\221\164\141\156\303\272\163 \303\255\164\166\303\241\156\171\060\202\001\042\060\015\006\011 \052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000 \060\202\001\012\002\202\001\001\000\304\044\136\163\276\113\155 \024\303\241\364\343\227\220\156\322\060\105\036\074\356\147\331 \144\340\032\212\177\312\060\312\203\343\040\301\343\364\072\323 \224\137\032\174\133\155\277\060\117\204\047\366\237\037\111\274  $\label{eq:condition} $$ 306 \times 31 \times 220 \times 62 \times 177 \times 365 \times 177 \times 204 \times 67 \times 121 \times 121 \times 172 \times 245$ \160\374\172\130\315\216\233\355\303\106\154\204\160\135\332\363 \001\220\043\374\116\060\251\176\341\047\143\347\355\144\074\240 \270\311\063\143\376\026\220\377\260\270\375\327\250\300\300\224 \103\013\266\325\131\246\236\126\320\044\037\160\171\257\333\071 \124\015\145\165\331\025\101\224\001\257\136\354\366\215\361\377 \255\144\376\040\232\327\134\353\376\246\037\010\144\243\213\166 \125\255\036\073\050\140\056\207\045\350\252\257\037\306\144\106 \040\267\160\177\074\336\110\333\226\123\267\071\167\344\032\342 \307\026\204\166\227\133\057\273\031\025\205\370\151\205\365\231

\247\251\362\064\247\251\266\246\003\374\157\206\075\124\174\166 \004\233\153\371\100\135\000\064\307\056\231\165\235\345\210\003 \252\115\370\003\322\102\166\300\033\002\003\000\250\213\243\105  $\label{eq:condition} $$ \060\103\060\022\006\003\125\035\023\001\001\377\004\010\060\006$ \001\001\377\002\001\004\060\016\006\003\125\035\017\001\001\377 \024\314\372\147\223\360\266\270\320\245\300\036\363\123\375\214 \123\337\203\327\226\060\015\006\011\052\206\110\206\367\015\001  $\label{eq:condition} $$ \001\01\000\003\202\001\001\000\253\177\356\034\026\251\234 $$$ \074\121\000\240\300\021\010\005\247\231\346\157\001\210\124\141 \156\361\271\030\255\112\255\376\201\100\043\224\057\373\165\174  $\begin{tabular}{l} $$ \begin{tabular}{l} $1.057 \begin{tabular}{l} $0.057 \begin{tabular}{l} $$ \353\201\372\142\241\073\132\142\323\224\145\304\341\346\155\202 \370\057\045\160\262\041\046\301\162\121\037\214\054\303\204\220 \303\132\217\272\317\364\247\145\245\353\230\321\373\005\262\106 \165\025\043\152\157\205\143\060\200\360\325\236\037\051\034\302  $\label{eq:condition} $$ \frac{154}{260}120\\131\\135\\220\\133\\073\\250\\015\\060\\317\\277\\175\\177\\316$ \361\235\203\275\311\106\156\040\246\371\141\121\272\041\057\173  $\label{eq:condition} $$ \276\245\025\143\241\324\225\207\361\236\271\363\211\363\075\205 $$$ \270\270\333\276\265\271\051\371\332\067\005\000\111\224\003\204 \104\347\277\103\061\317\165\213\045\321\364\246\144\365\222\366 \253\005\353\075\351\245\013\066\142\332\314\006\137\066\213\266  $\label{eq:condition} $$ \frac{061}{270}052\frac{373}{136}\frac{366}{161}\frac{337}{104}\frac{046}{236}\frac{304}{346}\frac{15}{221} $$$ \264\056\165\225\200\121\152\113\060\246\260\142\241\223\361\233 \330\316\304\143\165\077\131\107\261

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "NetLock Arany (Class Gold) Ftanúsítvány"
```

# Issuer: CN=NetLock Arany (Class Gold) F..tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification

Services),O=NetLock Kft.,L=Budapest,C=HU

# Serial Number:49:41:2c:e4:00:10

# Subject: CN=NetLock Arany (Class Gold) F..tan..s..tv..ny,OU=Tan..s..tv..nykiad..k (Certification

Services),O=NetLock Kft.,L=Budapest,C=HU

# Not Valid Before: Thu Dec 11 15:08:21 2008

# Not Valid After: Wed Dec 06 15:08:21 2028

# Fingerprint (SHA-256):

6C:61:DA:C3:A2:DE:F0:31:50:6B:E0:36:D2:A6:FE:40:19:94:FB:D1:3D:F9:C8:D4:66:59:92:74:C4:46:EC:98

# Fingerprint (SHA1): 06:08:3F:59:3F:15:A1:04:A0:69:A4:6B:A9:03:D0:06:B7:97:09:91

 ${\tt CKA\_CLASS\ CK\_OBJECT\_CLASS\ CKO\_NSS\_TRUST}$ 

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "NetLock Arany (Class Gold) Ftanúsítvány"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \006\010\077\131\077\025\241\004\240\151\244\153\251\003\320\006$ 

```
\267\227\011\221
END
CKA CERT MD5 HASH MULTILINE OCTAL
\305\241\267\377\163\335\326\327\064\062\030\337\374\074\255\210
END
CKA ISSUER MULTILINE OCTAL
\060\201\247\061\013\060\011\006\003\125\004\006\023\002\110\125
\061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160
\145\163\164\061\025\060\023\006\003\125\004\012\014\014\116\145
\164\114\157\143\153\040\113\146\164\056\061\067\060\065\006\003
\125\004\013\014\056\124\141\156\303\272\163\303\255\164\166\303
\241\156\171\153\151\141\144\303\263\153\040\050\103\145\162\164
\151\146\151\143\141\164\151\157\156\040\123\145\162\166\151\143
 \\ 164\\114\\157\\143\\153\\040\\101\\162\\141\\156\\171\\040\\050\\103\\154\\141
\163\163\040\107\157\154\144\051\040\106\305\221\164\141\156\303
\272\163\303\255\164\166\303\241\156\171
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\006\111\101\054\344\000\020
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Hongkong Post Root CA 1"
# Issuer: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK
# Serial Number: 1000 (0x3e8)
# Subject: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK
# Not Valid Before: Thu May 15 05:13:14 2003
# Not Valid After: Mon May 15 04:52:29 2023
# Fingerprint (SHA-256):
F9:E6:7D:33:6C:51:00:2A:C0:54:C6:32:02:2D:66:DD:A2:E7:E3:FF:F1:0A:D0:61:ED:31:D8:BB:B4:10:CF:B2
# Fingerprint (SHA1): D6:DA:A8:20:8D:09:D2:15:4D:24:B5:2F:CB:34:6E:B2:58:B2:8A:58
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

CKA\_TOKEN CK\_BBOOL CK\_TRUE
CKA\_PRIVATE CK\_BBOOL CK\_FALSE
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
CKA\_LABEL UTF8 "Hongkong Post Root CA 1"
CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509
CKA\_SUBJECT MULTILINE\_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157
\156\147\040\120\157\163\164\061\040\060\036\003\125\004\003
\023\027\110\157\156\147\153\156\147\040\120\157\163\164\040

\122\157\157\164\040\103\101\040\061

**END** 

CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000107\061\013\060\0011\006\003\125\004\006\023\002\110\113\061 $$ \026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157 $$ \156\147\040\120\157\156\147\153\157\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040\061 $$$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\003\350

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\060\060\202\002\030\240\003\002\001\002\002\003 \350\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000  $\label{eq:condition} $$ \060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061\$ \026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157 \156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003  $\label{eq:condition} $$ \023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040 $$$ \122\157\157\164\040\103\101\040\061\060\036\027\015\060\063\060 \065\061\065\060\065\061\063\061\064\132\027\015\062\063\060\065  $\label{eq:condition} $$ \061\065\060\064\065\062\062\071\132\060\107\061\013\060\011\006$ \003\125\004\006\023\002\110\113\061\026\060\024\006\003\125\004  $\label{eq:condition} $$ \012\023\015\110\157\156\147\153\157\156\147\040\120\157\163\164$$$ \061\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153 \157\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101  $\label{eq:condition} $$ \040\061\060\202\001\042\060\015\006\011\052\206\110\206\367\015 $$$ \001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202 \001\001\000\254\377\070\266\351\146\002\111\343\242\264\341\220 \371\100\217\171\371\342\275\171\376\002\275\356\044\222\035\042 \366\332\205\162\151\376\327\077\011\324\335\221\265\002\234\320 \215\132\341\125\303\120\206\271\051\046\302\343\331\240\361\151 \003\050\040\200\105\042\055\126\247\073\124\225\126\042\131\037 \050\337\037\040\075\155\242\066\276\043\240\261\156\265\261\047 \077\071\123\011\352\253\152\350\164\262\302\145\134\216\277\174 \303\170\204\315\236\026\374\365\056\117\040\052\010\237\167\363 \305\036\304\232\122\146\036\110\136\343\020\006\217\042\230\341  $\label{eq:condition} $$ 145\216\033\135\043\146\073\270\245\062\121\310\206\252\241\251$ \236\177\166\224\302\246\154\267\101\360\325\310\006\070\346\324 \014\342\363\073\114\155\120\214\304\203\047\301\023\204\131\075 \236\165\164\266\330\002\136\072\220\172\300\102\066\162\354\152 \115\334\357\304\000\337\023\030\127\137\046\170\310\326\012\171 \167\277\367\257\267\166\271\245\013\204\027\135\020\352\157\341 \253\225\021\137\155\074\243\134\115\203\133\362\263\031\212\200 \213\013\207\002\003\001\000\001\243\046\060\044\060\022\006\003 \125\035\023\001\001\377\004\010\060\006\001\001\377\002\001\003 \060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\306

\060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\003 \202\001\001\000\016\106\325\074\256\342\207\331\136\201\213\002  $\verb|230|101|010|214|114|274|332|333|356|047|033|202|347|152|105|354|$  $\label{eq:condition} $$ \026\213\117\205\240\363\262\160\275\132\226\272\312\156\155\356$$ \106\213\156\347\052\056\226\263\031\063\353\264\237\250\262\067 \356\230\250\227\266\056\266\147\047\324\246\111\375\034\223\145 \166\236\102\057\334\042\154\232\117\362\132\025\071\261\161\327 \053\121\350\155\034\230\300\331\052\364\241\202\173\325\311\101 \242\043\001\164\070\125\213\017\271\056\147\242\040\004\067\332 \234\013\323\027\041\340\217\227\171\064\157\204\110\002\040\063 \033\346\064\104\237\221\160\364\200\136\204\103\302\051\322\154  $\label{eq:condition} $$ \022\024\344\141\215\254\020\220\236\204\120\273\360\226\157\105$ \237\212\363\312\154\117\372\021\072\025\025\106\303\315\037\203 \133\055\101\022\355\120\147\101\023\075\041\253\224\212\252\116 \174\301\261\373\247\326\265\047\057\227\253\156\340\035\342\321  $\label{eq:condition} $$ \034\054\037\104\342\374\276\221\241\234\373\326\051\123\163\206 $$$ \237\123\330\103\016\135\326\143\202\161\035\200\164\312\366\342 \002\153\331\132

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Hongkong Post Root CA 1"

# Issuer: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK

# Serial Number: 1000 (0x3e8)

# Subject: CN=Hongkong Post Root CA 1,O=Hongkong Post,C=HK

# Not Valid Before: Thu May 15 05:13:14 2003 # Not Valid After: Mon May 15 04:52:29 2023

# Fingerprint (SHA-256):

F9:E6:7D:33:6C:51:00:2A:C0:54:C6:32:02:2D:66:DD:A2:E7:E3:FF:F1:0A:D0:61:ED:31:D8:BB:B4:10:CF:B2

# Fingerprint (SHA1): D6:DA:A8:20:8D:09:D2:15:4D:24:B5:2F:CB:34:6E:B2:58:B2:8A:58

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Hongkong Post Root CA 1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\326\332\250\040\215\011\322\025\115\044\265\057\313\064\156\262 \130\262\212\130

**END** 

CKA CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \250\015\157\071\170\271\103\155\167\102\155\230\132\314\043\312$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\110\113\061 \026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157 \156\147\040\120\157\163\164\061\040\060\036\006\003\125\004\003

```
\023\027\110\157\156\147\153\157\156\147\040\120\157\163\164\040
\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\002\003\350
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
#
# Certificate "SecureSign RootCA11"
# Issuer: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP
# Serial Number: 1 (0x1)
# Subject: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP
# Not Valid Before: Wed Apr 08 04:56:47 2009
# Not Valid After: Sun Apr 08 04:56:47 2029
# Fingerprint (SHA-256):
BF:0F:EE:FB:9E:3A:58:1A:D5:F9:E9:DB:75:89:98:57:43:D2:61:08:5C:4D:31:4F:6F:5D:72:59:AA:42:16:12
# Fingerprint (SHA1): 3B:C4:9F:48:F3:73:A0:9C:1E:BD:F8:5B:B1:C3:65:C7:D8:11:B3
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA LABEL UTF8 "SecureSign RootCA11"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA SUBJECT MULTILINE OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\label{eq:condition} $$ \053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040 $$
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147
\156\040\122\157\157\164\103\101\061\061
END
CKA ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\label{eq:condition} $$ \060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061\
\label{eq:condition} $$ \053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040 $$
\103\145\162\164\151\146\151\143\141\164\151\157\156\040\123\145
\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032
\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147
\156\040\122\157\157\164\103\101\061\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
```

#### CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\155\060\202\002\125\240\003\002\001\002\002\001\001 \060\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060 \130\061\013\060\011\006\003\125\004\006\023\002\112\120\061\053 \060\051\006\003\125\004\012\023\042\112\141\160\141\156\040\103 \145\162\164\151\146\151\143\141\164\151\157\156\040\123\145\162 \166\151\143\145\163\054\040\111\156\143\056\061\034\060\032\006 \003\125\004\003\023\023\123\145\143\165\162\145\123\151\147\156 \040\122\157\157\164\103\101\061\061\060\036\027\015\060\071\060 \064\060\070\060\064\065\066\064\067\132\027\015\062\071\060\064 \060\070\060\064\065\066\064\067\132\060\130\061\013\060\011\006  $\label{eq:condition} $$ \003\125\004\006\023\002\112\120\061\053\060\051\006\003\125\004$ \012\023\042\112\141\160\141\156\040\103\145\162\164\151\146\151 \143\141\164\151\157\156\040\123\145\162\166\151\143\145\163\054  $\label{eq:condition} $$ \040\111\156\143\056\061\034\060\032\006\003\125\004\003\023\023$ \123\145\143\165\162\145\123\151\147\156\040\122\157\157\164\103 \101\061\061\060\202\001\042\060\015\006\011\052\206\110\206\367 \015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002 \202\001\001\000\375\167\252\245\034\220\005\073\313\114\233\063 \213\132\024\105\244\347\220\026\321\337\127\322\041\020\244\027 \375\337\254\326\037\247\344\333\174\367\354\337\270\003\332\224 \130\375\135\162\174\214\077\137\001\147\164\025\226\343\002\074 \207\333\256\313\001\216\302\363\146\306\205\105\364\002\306\072 \265\142\262\257\372\234\277\244\346\324\200\060\230\363\015\266 \223\217\251\324\330\066\362\260\374\212\312\054\241\025\063\225 \061\332\300\033\362\356\142\231\206\143\077\277\335\223\052\203 \250\166\271\023\037\267\316\116\102\205\217\042\347\056\032\362 \225\011\262\005\265\104\116\167\241\040\275\251\362\116\012\175 \120\255\365\005\015\105\117\106\161\375\050\076\123\373\004\330 \055\327\145\035\112\033\372\317\073\260\061\232\065\156\310\213  $\label{eq:condition} $$ \006\323\000\221\362\224\010\145\114\261\064\006\000\172\211\342 $$$ \360\307\003\131\317\325\326\350\247\062\263\346\230\100\206\305 \315\047\022\213\314\173\316\267\021\074\142\140\007\043\076\053 \100\156\224\200\011\155\266\263\157\167\157\065\010\120\373\002 \207\305\076\211\002\003\001\000\001\243\102\060\100\060\035\006 \003\125\035\016\004\026\004\024\133\370\115\117\262\245\206\324 \072\322\361\143\232\240\276\011\366\127\267\336\060\016\006\003 \125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003 \125\035\023\001\001\377\004\005\060\003\001\001\377\060\015\006 \011\052\206\110\206\367\015\001\001\005\005\000\003\202\001\001 \000\240\241\070\026\146\056\247\126\037\041\234\006\372\035\355 \271\042\305\070\046\330\116\117\354\243\177\171\336\106\041\241 \207\167\217\007\010\232\262\244\305\257\017\062\230\013\174\146 \051\266\233\175\045\122\111\103\253\114\056\053\156\172\160\257 \026\016\343\002\154\373\102\346\030\235\105\330\125\310\350\073 \335\347\341\364\056\013\034\064\134\154\130\112\373\214\210\120 \137\225\034\277\355\253\042\265\145\263\205\272\236\017\270\255  $\label{eq:condition} $$ 345\172\033\212\120\072\035\275\015\274\173\124\120\013\271\102$   $\label{eq:control_control_control_control_control} $$ \257\125\240\030\201\255\145\231\357\276\344\234\277\304\205\253 \101\262\124\157\334\045\315\355\170\342\216\014\215\011\111\335 \143\173\132\151\226\002\041\250\275\122\131\351\175\065\313\310 \122\312\177\201\376\331\153\323\367\021\355\045\337\370\347\371 \244\372\162\227\204\123\015\245\320\062\030\121\166\131\024\154 \017\353\354\137\200\214\165\103\203\303\205\230\377\114\236\055 \015\344\167\203\223\116\265\226\007\213\050\023\233\214\031\215 \101\047\111\100\356\336\346\043\104\071\334\241\042\326\272\003 \362$ 

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "SecureSign RootCA11"

# Issuer: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP

# Serial Number: 1 (0x1)

# Subject: CN=SecureSign RootCA11,O="Japan Certification Services, Inc.",C=JP

# Not Valid Before: Wed Apr 08 04:56:47 2009

# Not Valid After: Sun Apr 08 04:56:47 2029

# Fingerprint (SHA-256):

BF:0F:EE:FB:9E:3A:58:1A:D5:F9:E9:DB:75:89:98:57:43:D2:61:08:5C:4D:31:4F:6F:5D:72:59:AA:42:16:12

# Fingerprint (SHA1): 3B:C4:9F:48:F8:F3:73:A0:9C:1E:BD:F8:5B:B1:C3:65:C7:D8:11:B3

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "SecureSign RootCA11"

CKA CERT SHA1 HASH MULTILINE OCTAL

 $\label{eq:condition} $$ \073\304\237\110\370\363\163\240\234\036\275\370\133\261\303\145 $$$ 

\307\330\021\263

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\267\122\164\342\222\264\200\223\362\165\344\314\327\362\352\046

**END** 

CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \060\130\061\013\060\011\006\003\125\004\006\023\002\112\120\061 $$$ 

\053\060\051\006\003\125\004\012\023\042\112\141\160\141\156\040

\162\166\151\143\145\163\054\040\111\156\143\056\061\034\060\032

\006\003\125\004\003\023\023\123\145\143\165\162\145\123\151\147

 $\label{eq:condition} $$ \frac{156}040\\122\\157\\157\\164\\103\\101\\061\\061$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

# CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE # Certificate "Microsec e-Szigno Root CA 2009" # Issuer: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU # Serial Number:00:c2:7e:43:04:4e:47:3f:19 # Subject: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU # Not Valid Before: Tue Jun 16 11:30:18 2009 # Not Valid After: Sun Dec 30 11:30:18 2029 # Fingerprint (SHA-256): 3C:5F:81:FE:A5:FA:B8:2C:64:BF:A2:EA:EC:AF:CD:E8:E0:77:FC:86:20:A7:CA:E5:37:16:3D:F3:6E:DB:F3:78 # Fingerprint (SHA1): 89:DF:74:FE:5C:F4:0F:4A:80:F9:E3:37:7D:54:DA:91:E1:01:31:8E CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE CKA TOKEN CK BBOOL CK TRUE CKA\_PRIVATE CK\_BBOOL CK\_FALSE CKA MODIFIABLE CK BBOOL CK FALSE CKA\_LABEL UTF8 "Microsec e-Szigno Root CA 2009" CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA SUBJECT MULTILINE OCTAL  $\label{eq:condition} $$ \060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125$ 

 $\label{eq:condition} $$ \001\001\000\003\125\004\007\014\010\102\165\144\141\160 $$$ \145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151 \143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006 \003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145 \055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040  $\label{eq:condition} $$ \062\060\071\061\037\060\035\006\011\052\206\110\206\367\015$$$  $\label{eq:condition} $$ \001\01\001\026\020\151\156\146\157\100\145\055\163\172\151\147 $$$ \156\157\056\150\165

**END** 

CKA ID UTF8 "0"

# CKA ISSUER MULTILINE OCTAL

\060\201\202\061\013\060\011\006\003\125\004\006\023\002\110\125 \061\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160 \145\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151 \143\162\157\163\145\143\040\114\164\144\056\061\047\060\045\006 \003\125\004\003\014\036\115\151\143\162\157\163\145\143\040\145  $\label{eq:condition} $$ \055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040 $$$ \062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015 \001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147 \156\157\056\150\165

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\302\176\103\004\116\107\077\031

**END** 

CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\012\060\202\002\362\240\003\002\001\002\002\011\000

\302\176\103\004\116\107\077\031\060\015\006\011\052\206\110\206 \367\015\001\001\013\005\000\060\201\202\061\013\060\011\006\003 \125\004\006\023\002\110\125\061\021\060\017\006\003\125\004\007 \014\010\102\165\144\141\160\145\163\164\061\026\060\024\006\003 \125\004\012\014\015\115\151\143\162\157\163\145\143\040\114\164 \144\056\061\047\060\045\006\003\125\004\003\014\036\115\151\143 \162\157\163\145\143\040\145\055\123\172\151\147\156\157\040\122 \157\157\164\040\103\101\040\062\060\060\071\061\037\060\035\006  $\label{eq:condition} $$ \011\052\206\110\206\367\015\001\011\001\026\020\151\156\146\157 $$$ \100\145\055\163\172\151\147\156\157\056\150\165\060\036\027\015 \060\071\060\066\061\066\061\061\063\060\061\070\132\027\015\062  $\label{eq:condition} $$ \061\062\063\060\061\061\060\061\070\132\060\201\202\061 $$$ \013\060\011\006\003\125\004\006\023\002\110\125\061\021\060\017  $\label{eq:condition} $$ \006\003\125\004\007\014\010\102\165\144\141\160\145\163\164\061 $$$  $\label{eq:condition} $$ \026\060\024\006\003\125\004\012\014\015\115\151\143\162\157\163$ \145\143\040\114\164\144\056\061\047\060\045\006\003\125\004\003  $\label{eq:condition} $$ \014\036\115\151\143\162\157\163\145\143\040\145\055\123\172\151 $$$ \147\156\157\040\122\157\157\164\040\103\101\040\062\060\060\071 \061\037\060\035\006\011\052\206\110\206\367\015\001\011\001\026  $\label{eq:condition} $$ \020\151\156\146\157\100\145\055\163\172\151\147\156\157\056\150 $$$ \165\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001 \001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  $\label{eq:condition} $$ 001\000\351\370\217\363\143\255\332\206\330\247\340\102\373\317 $$$ \221\336\246\046\370\231\245\143\160\255\233\256\312\063\100\175 \155\226\156\241\016\104\356\341\023\235\224\102\122\232\275\165 \205\164\054\250\016\035\223\266\030\267\214\054\250\317\373\134 \161\271\332\354\376\350\176\217\344\057\035\262\250\165\207\330 \267\241\345\073\317\231\112\106\320\203\031\175\300\241\022\034 \225\155\112\364\330\307\245\115\063\056\205\071\100\165\176\024 \174\200\022\230\120\307\101\147\270\240\200\141\124\246\154\116  $\label{eq:condition} $$ \037\340\235\016\007\351\311\272\063\347\376\300\125\050\054\002$ \200\247\031\365\236\334\125\123\003\227\173\007\110\377\231\373 \067\212\044\304\131\314\120\020\143\216\252\251\032\260\204\032 \206\371\137\273\261\120\156\244\321\012\314\325\161\176\037\247 \033\174\365\123\156\042\137\313\053\346\324\174\135\256\326\302 \306\114\345\005\001\331\355\127\374\301\043\171\374\372\310\044 \203\225\363\265\152\121\001\320\167\326\351\022\241\371\032\203 \373\202\033\271\260\227\364\166\006\063\103\111\240\377\013\265 \372\265\002\003\001\000\001\243\201\200\060\176\060\017\006\003 \125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006 \003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006  $\label{eq:condition} $$ \03\125\035\016\004\026\004\024\313\017\306\337\102\103\314\075$ \313\265\110\043\241\032\172\246\052\273\064\150\060\037\006\003 \125\035\043\004\030\060\026\200\024\313\017\306\337\102\103\314 \075\313\265\110\043\241\032\172\246\052\273\064\150\060\033\006 \003\125\035\021\004\024\060\022\201\020\151\156\146\157\100\145 \055\163\172\151\147\156\157\056\150\165\060\015\006\011\052\206  $\label{eq:condition} $$ 110\206\367\015\001\001\013\005\000\003\202\001\001\000\311\321 $$$ 

\016\136\056\325\314\263\174\076\313\374\075\377\015\050\225\223 \004\310\277\332\315\171\270\103\220\360\244\276\357\362\357\041 \230\274\324\324\135\006\366\356\102\354\060\154\240\252\251\312  $\label{eq:condition} $$ \361\257\212\372\077\013\163\152\076\352\056\100\176\037\256\124$$ \141\171\353\056\010\067\327\043\363\214\237\276\035\261\341\244  $\label{eq:condition} $$ 165\333\240\342\124\024\261\272\034\051\244\030\366\022\272\242$ \024\024\343\061\065\310\100\377\267\340\005\166\127\301\034\131 \362\370\277\344\355\045\142\134\204\360\176\176\037\263\276\371 \267\041\021\314\003\001\126\160\247\020\222\036\033\064\201\036 \255\234\032\303\004\074\355\002\141\326\036\006\363\137\072\207 \362\053\361\105\207\345\075\254\321\307\127\204\275\153\256\334 \330\371\266\033\142\160\013\075\066\311\102\362\062\327\172\141 \346\322\333\075\317\310\251\311\233\334\333\130\104\327\157\070 \257\177\170\323\243\255\032\165\272\034\301\066\174\217\036\155  $\label{eq:condition} $$ \034\303\165\106\256\065\005\246\366\134\075\041\356\126\360\311 $$$ \202\042\055\172\124\253\160\303\175\042\145\202\160\226 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Microsec e-Szigno Root CA 2009"
- # Issuer: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
- # Serial Number:00:c2:7e:43:04:4e:47:3f:19
- # Subject: E=info@e-szigno.hu,CN=Microsec e-Szigno Root CA 2009,O=Microsec Ltd.,L=Budapest,C=HU
- # Not Valid Before: Tue Jun 16 11:30:18 2009
- # Not Valid After: Sun Dec 30 11:30:18 2029
- # Fingerprint (SHA-256):
- 3C:5F:81:FE:A5:FA:B8:2C:64:BF:A2:EA:EC:AF:CD:E8:E0:77:FC:86:20:A7:CA:E5:37:16:3D:F3:6E:DB:F3:78
- # Fingerprint (SHA1): 89:DF:74:FE:5C:F4:0F:4A:80:F9:E3:37:7D:54:DA:91:E1:01:31:8E
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "Microsec e-Szigno Root CA 2009"
- CKA CERT SHA1 HASH MULTILINE OCTAL
- $\label{eq:condition} $$ \frac{371\37}{64\376\134\364\017\112\200\371\343\067\175\124\332\221\341\001\061\216}$
- **END**
- CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL
- \370\111\364\003\274\104\055\203\276\110\151\175\051\144\374\261
- **END**
- CKA\_ISSUER MULTILINE\_OCTAL

```
\055\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040
\062\060\060\071\061\037\060\035\006\011\052\206\110\206\367\015
\001\011\001\026\020\151\156\146\157\100\145\055\163\172\151\147
\156\157\056\150\165
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\302\176\103\004\116\107\077\031
END
{\tt CKA\_TRUST\_SERVER\_AUTH\ CK\_TRUST\ CKT\_NSS\_TRUSTED\_DELEGATOR}
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "GlobalSign Root CA - R3"
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3
# Serial Number:04:00:00:00:00:01:21:58:53:08:a2
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R3
# Not Valid Before: Wed Mar 18 10:00:00 2009
# Not Valid After: Sun Mar 18 10:00:00 2029
# Fingerprint (SHA-256):
CB:B5:22:D7:B7:F1:27:AD:6A:01:13:86:5B:DF:1C:D4:10:2E:7D:07:59:AF:63:5A:7C:F4:72:0D:C9:63:C5:3B
# Fingerprint (SHA1): D6:9B:56:11:48:F0:1C:77:C5:45:78:C1:09:26:DF:5B:85:69:76:AD
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "GlobalSign Root CA - R3"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA_SUBJECT MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157
\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040
\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107
\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125
\004\003\023\012\107\154\157\142\141\154\123\151\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\004\000\000\000\000\001\041\130\123\010\242
END
```

#### CKA VALUE MULTILINE OCTAL

\060\202\003\137\060\202\002\107\240\003\002\001\002\002\013\004 \000\000\000\000\001\041\130\123\010\242\060\015\006\011\052\206 \110\206\367\015\001\001\013\005\000\060\114\061\040\060\036\006 \003\125\004\013\023\027\107\154\157\142\141\154\123\151\147\156  $\\ \\040\\122\\157\\157\\164\\040\\103\\101\\040\\055\\040\\122\\063\\061\\023\\060$ \021\006\003\125\004\012\023\012\107\154\157\142\141\154\123\151 \147\156\061\023\060\021\006\003\125\004\003\023\012\107\154\157 \142\141\154\123\151\147\156\060\036\027\015\060\071\060\063\061 \070\061\060\060\060\060\060\132\027\015\062\071\060\063\061\070 \061\060\060\060\060\060\132\060\114\061\040\060\036\006\003\125  $\\ \\004\\\\013\\\\023\\\\027\\\\107\\\\154\\\\157\\\\142\\\\141\\\\154\\\\123\\\\151\\\\147\\\\156\\\\040\\\\122$ \157\157\164\040\103\101\040\055\040\122\063\061\023\060\021\006  $\\ \\003\\125\\004\\012\\023\\012\\107\\154\\157\\142\\141\\154\\123\\151\\147\\156$  $\label{eq:condition} $$ \061\023\060\021\006\003\125\004\003\023\012\107\154\157\142\141 $$$ \154\123\151\147\156\060\202\001\042\060\015\006\011\052\206\110 \206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001 \012\002\202\001\001\000\314\045\166\220\171\006\170\042\026\365 \300\203\266\204\312\050\236\375\005\166\021\305\255\210\162\374 \106\002\103\307\262\212\235\004\137\044\313\056\113\341\140\202 \106\341\122\253\014\201\107\160\154\335\144\321\353\365\054\243 \017\202\075\014\053\256\227\327\266\024\206\020\171\273\073\023  $\label{eq:condition} $$ \200\167\214\010\341\111\322\152\142\057\037\136\372\226\150\337 $$$ \211\047\225\070\237\006\327\076\311\313\046\131\015\163\336\260 \310\351\046\016\203\025\306\357\133\213\322\004\140\312\111\246 \050\366\151\073\366\313\310\050\221\345\235\212\141\127\067\254 \164\024\334\164\340\072\356\162\057\056\234\373\320\273\277\365  $\label{eq:condition} $$ \075\000\341\006\063\350\202\053\256\123\246\072\026\163\214\335 $$$ \101\016\040\072\300\264\247\241\351\262\117\220\056\062\140\351 \127\313\271\004\222\150\150\345\070\046\140\165\262\237\167\377  $\label{eq:condition} $$ \221\024\357\256\040\111\374\255\100\025\110\321\002\061\141\031 $$$ \136\270\227\357\255\167\267\144\232\172\277\137\301\023\357\233 \142\373\015\154\340\124\151\026\251\003\332\156\351\203\223\161 \166\306\151\205\202\027\002\003\001\000\001\243\102\060\100\060 \016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060 \017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377 \060\035\006\003\125\035\016\004\026\004\024\217\360\113\177\250  $\label{eq:condition} $$ \056\105\044\256\115\120\372\143\232\213\336\342\335\033\274\060 $$$  $\label{eq:condition} $$ \0.015\0.06\0.011\0.052\2.06\1.10\2.06\3.67\0.15\0.01\0.01\0.01\0.013\0.05\0.00\0.003\2.02$  $\label{eq:condition} $$ \001\001\000\113\100\333\300\120\252\376\310\014\357\367\226\124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124 = 124$ \105\111\273\226\000\011\101\254\263\023\206\206\050\007\063\312 \153\346\164\271\272\000\055\256\244\012\323\365\361\361\017\212 \277\163\147\112\203\307\104\173\170\340\257\156\154\157\003\051 \216\063\071\105\303\216\344\271\127\154\252\374\022\226\354\123 \306\055\344\044\154\271\224\143\373\334\123\150\147\126\076\203 \270\317\065\041\303\311\150\376\316\332\302\123\252\314\220\212 \351\360\135\106\214\225\335\172\130\050\032\057\035\336\315\000  $\label{eq:condition} $$ \067\101\217\355\104\155\327\123\050\227\176\363\147\004\036\025$$$ 

 $\label{eq:control_control_control_control_control} $$ 327\26\264\323\336\114\047\244\114\033\163\163\166\364\027 $$ 231\302\037\172\016\343\055\010\255\012\034\054\377\074\253\125 $$ 016\017\221\176\066\353\303\127\111\276\341\056\055\174\140\213 $$ 303\101\121\023\043\235\316\367\062\153\224\001\250\231\347\054 $$ 063\037\072\073\045\322\206\100\316\073\054\206\170\311\141\057 $$ 024\272\356\333\125\157\337\204\356\005\011\115\275\050\330\162 $$ 316\323\142\120\145\036\353\222\227\203\061\331\263\265\312\107 $$ 130\077\137 $$$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "GlobalSign Root CA R3"
- # Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA R3
- # Serial Number:04:00:00:00:00:01:21:58:53:08:a2
- # Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA R3
- # Not Valid Before: Wed Mar 18 10:00:00 2009
- # Not Valid After: Sun Mar 18 10:00:00 2029
- # Fingerprint (SHA-256):

CB:B5:22:D7:B7:F1:27:AD:6A:01:13:86:5B:DF:1C:D4:10:2E:7D:07:59:AF:63:5A:7C:F4:72:0D:C9:63:C5:3B

# Fingerprint (SHA1): D6:9B:56:11:48:F0:1C:77:C5:45:78:C1:09:26:DF:5B:85:69:76:AD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA LABEL UTF8 "GlobalSign Root CA - R3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\326\233\126\021\110\360\034\167\305\105\170\301\011\046\337\133 \205\151\166\255

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 337 \times 370 \times 111 \times 12 \times 32 \times 125 \times 356 \times 272 \times 303 \times 303 \times 306 \times 260 \times 305 \times 306 \times$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157

 $\\ 142\\141\\154\\123\\151\\147\\156\\040\\122\\157\\157\\164\\040\\103\\101\\040$ 

\055\040\122\063\061\023\060\021\006\003\125\004\012\023\012\107

 $\label{eq:condition} $$ \frac{154\\157\\142\\141\\154\\123\\151\\147\\156\\061\\023\\060\\021\\006\\003\\125$ 

 $\\ \\004\\ \\003\\ \\023\\ \\012\\ \\107\\ \\154\\ \\157\\ \\142\\ \\141\\ \\154\\ \\123\\ \\151\\ \\147\\ \\156$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\013\004\000\000\000\000\001\041\130\123\010\242

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Autoridad de Certificacion Firmaprofesional CIF A62634068"

#

- # Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
- # Serial Number:53:ec:3b:ee:fb:b2:48:5f
- # Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
- # Not Valid Before: Wed May 20 08:38:15 2009
- # Not Valid After: Tue Dec 31 08:38:15 2030
- # Fingerprint (SHA-256):

04:04:80:28:BF:1F:28:64:D4:8F:9A:D4:D8:32:94:36:6A:82:88:56:55:3F:3B:14:30:3F:90:14:7F:5D:40:EF

# Fingerprint (SHA1): AE:C5:FB:3F:C8:E1:BF:C4:E5:4F:03:07:5A:9A:E8:00:B7:F7:B6:FA

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061 $$$ 

\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151

\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141

 $\label{eq:condition} $$ \frac{143\\151\\157\\156\\040\\106\\151\\162\\155\\141\\160\\162\\157\\146\\145\\163$ 

\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064

\060\066\070

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

\060\066\070

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

 $\\002\\010\\123\\354\\073\\356\\373\\262\\110\\137$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\162\155\141\160\162\157\146\145\163\151\157\156\141\154\056\143 \157\155\057\143\160\163\060\134\006\010\053\006\001\005\005\007 \002\002\060\120\036\116\000\120\000\141\000\163\000\145\000\157 \000\040\000\144\000\145\000\040\000\154\000\141\000\040\000\102 \000\157\000\156\000\141\000\156\000\157\000\166\000\141\000\040  $\label{eq:condition} $$ \000\064\000\067\000\040\000\102\000\141\000\162\000\143\000\145$$ \000\154\000\157\000\156\000\141\000\040\000\060\000\070\000\060 \000\061\000\067\060\015\006\011\052\206\110\206\367\015\001\001  $\label{eq:condition} $$ \005\000\003\202\002\001\000\027\175\240\371\264\335\305\305\$ \353\255\113\044\265\241\002\253\335\245\210\112\262\017\125\113 \053\127\214\073\345\061\335\376\304\062\361\347\133\144\226\066  $\label{eq:condition} $$ \062\030\354\245\062\167\327\343\104\266\300\021\052\200\271\075$$ \152\156\174\233\323\255\374\303\326\243\346\144\051\174\321\341  $\label{eq:condition} $$ \070\036\202\053\377\047\145\257\373\026\025\304\056\161\204\345 $$$ \265\377\372\244\107\275\144\062\273\366\045\204\242\047\102\365 \040\260\302\023\020\021\315\020\025\272\102\220\052\322\104\341 \226\046\353\061\110\022\375\052\332\311\006\317\164\036\251\113 \325\207\050\371\171\064\222\076\056\104\350\366\217\117\217\065 \077\045\263\071\334\143\052\220\153\040\137\304\122\022\116\227 \054\052\254\235\227\336\110\362\243\146\333\302\322\203\225\246 \146\247\236\045\017\351\013\063\221\145\012\132\303\331\124\022 \335\257\303\116\016\037\046\136\015\334\263\215\354\325\201\160  $\label{eq:condition} $$ 336 \ 322 \ 117 \ 044 \ 005 \ 363 \ 154 \ 116 \ 365 \ 114 \ 111 \ 146 \ 215 \ 321 \ 377 \ 322$ \013\045\101\110\376\121\204\306\102\257\200\004\317\320\176\144 \111\344\362\337\242\354\261\114\300\052\035\347\264\261\145\242 \304\274\361\230\364\252\160\007\143\264\270\332\073\114\372\100 \042\060\133\021\246\360\005\016\306\002\003\110\253\206\233\205 \335\333\335\352\242\166\200\163\175\365\234\004\304\105\215\347 \271\034\213\236\352\327\165\321\162\261\336\165\104\347\102\175 \342\127\153\175\334\231\274\075\203\050\352\200\223\215\305\114 \145\301\160\201\270\070\374\103\061\262\366\003\064\107\262\254 \373\042\006\313\036\335\027\107\034\137\146\271\323\032\242\332 \021\261\244\274\043\311\344\276\207\377\271\224\266\370\135\040 \112\324\137\347\275\150\173\145\362\025\036\322\072\251\055\351 \330\153\044\254\227\130\104\107\255\131\030\361\041\145\160\336 \316\064\140\250\100\361\363\074\244\303\050\043\214\376\047\063 \103\100\240\027\074\353\352\073\260\162\246\243\271\112\113\136 \026\110\364\262\274\310\214\222\305\235\237\254\162\066\274\064 \200\064\153\251\213\222\300\270\027\355\354\166\123\365\044\001 \214\263\042\350\113\174\125\306\235\372\243\024\273\145\205\156 \156\117\022\176\012\074\235\225

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Autoridad de Certificacion Firmaprofesional CIF A62634068"

<sup>#</sup> Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES

```
# Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
# Not Valid Before: Wed May 20 08:38:15 2009
# Not Valid After: Tue Dec 31 08:38:15 2030
# Fingerprint (SHA-256):
04:04:80:28:BF:1F:28:64:D4:8F:9A:D4:D8:32:94:36:6A:82:88:56:55:3F:3B:14:30:3F:90:14:7F:5D:40:EF
# Fingerprint (SHA1): AE:C5:FB:3F:C8:E1:BF:C4:E5:4F:03:07:5A:9A:E8:00:B7:F7:B6:FA
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068"
CKA CERT SHA1 HASH MULTILINE OCTAL
\256\305\373\077\310\341\277\304\345\117\003\007\132\232\350\000
\267\367\266\372
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\163\072\164\172\354\273\243\226\246\302\344\342\310\233\300\303
END
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061
 \\ 144 \\ 141 \\ 144 \\ 040 \\ 144 \\ 145 \\ 040 \\ 103 \\ 145 \\ 162 \\ 164 \\ 151 \\ 146 \\ 151 \\ 143 \\ 141 \\
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\123\354\073\356\373\262\110\137
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Izenpe.com"
# Issuer: CN=Izenpe.com,O=IZENPE S.A.,C=ES
# Serial Number:00:b0:b7:5a:16:48:5f:bf:e1:cb:f5:8b:d7:19:e6:7d
# Subject: CN=Izenpe.com,O=IZENPE S.A.,C=ES
# Not Valid Before: Thu Dec 13 13:08:28 2007
# Not Valid After: Sun Dec 13 08:27:25 2037
# Fingerprint (SHA-256):
25:30:CC:8E:98:32:15:02:BA:D9:6F:9B:1F:BA:1B:09:9E:2D:29:9E:0F:45:48:BB:91:4F:36:3B:C0:D4:53:1F
# Fingerprint (SHA1): 2F:78:3D:25:52:18:A7:4A:65:39:71:B5:2C:A2:9C:45:15:6F:E9:19
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
```

# Serial Number:53:ec:3b:ee:fb:b2:48:5f

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Izenpe.com"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

**END** 

#### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\000\260\267\132\026\110\137\277\341\313\365\213\327\031 \346\175

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\005\361\060\202\003\331\240\003\002\001\002\002\002\000$ \260\267\132\026\110\137\277\341\313\365\213\327\031\346\175\060 \015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\070 \061\013\060\011\006\003\125\004\006\023\002\105\123\061\024\060 \022\006\003\125\004\012\014\013\111\132\105\116\120\105\040\123  $\label{eq:condition} $$ \056\101\056\061\023\060\021\006\003\125\004\003\014\012\111\172$ \145\156\160\145\056\143\157\155\060\036\027\015\060\067\061\062 \061\063\061\063\060\070\062\070\132\027\015\063\067\061\062\061  $\label{eq:condition} $$ \063\060\070\062\065\132\060\070\061\013\060\011\006\003$$ \125\004\006\023\002\105\123\061\024\060\022\006\003\125\004\012 \014\013\111\132\105\116\120\105\040\123\056\101\056\061\023\060 \021\006\003\125\004\003\014\012\111\172\145\156\160\145\056\143 \157\155\060\202\002\042\060\015\006\011\052\206\110\206\367\015 \001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202 \002\001\000\311\323\172\312\017\036\254\247\206\350\026\145\152 \261\302\033\105\062\161\225\331\376\020\133\314\257\347\245\171  $\label{eq:condition} $$ \001\217\211\303\312\362\125\161\367\167\276\167\224\363\162\244 $$$  $\label{eq:condition} $$ \054\104\330\236\222\233\024\072\241\347\044\220\012\012\126\216$ \305\330\046\224\341\331\110\341\055\076\332\012\162\335\243\231 \025\332\201\242\207\364\173\156\046\167\211\130\255\326\353\014 \262\101\172\163\156\155\333\172\170\101\351\010\210\022\176\207 \056\146\021\143\154\124\373\074\235\162\300\274\056\377\302\267 \335\015\166\343\072\327\367\264\150\276\242\365\343\201\156\301 \106\157\135\215\340\115\306\124\125\211\032\063\061\012\261\127 \271\243\212\230\303\354\073\064\305\225\101\151\176\165\302\074 \040\305\141\272\121\107\240\040\220\223\241\220\113\363\116\174

\205\105\124\232\321\005\046\101\260\265\115\035\063\276\304\003 \310\045\174\301\160\333\073\364\011\055\124\047\110\254\057\341 \304\254\076\310\313\222\114\123\071\067\043\354\323\001\371\340 \011\104\115\115\144\300\341\015\132\207\042\274\255\033\243\376 \046\265\025\363\247\374\204\031\351\354\241\210\264\104\151\204 \203\363\211\321\164\006\251\314\013\326\302\336\047\205\120\046 \312\027\270\311\172\207\126\054\032\001\036\154\276\023\255\020 \254\265\044\365\070\221\241\326\113\332\361\273\322\336\107\265 \361\274\201\366\131\153\317\031\123\351\215\025\313\112\313\251 \157\104\345\033\101\317\341\206\247\312\320\152\237\274\114\215  $\label{eq:condition} $$ \006\063\132\242\205\345\220\065\240\142\134\026\116\360\343\242$ \372\003\032\264\054\161\263\130\054\336\173\013\333\032\017\353 \336\041\037\006\167\006\003\260\311\357\231\374\300\271\117\013 \206\050\376\322\271\352\343\332\245\303\107\151\022\340\333\360 \366\031\213\355\173\160\327\002\326\355\207\030\050\054\004\044 \114\167\344\110\212\032\306\073\232\324\017\312\372\165\322\001  $\label{eq:condition} $$ 100\132\215\171\277\213\317\113\317\252\026\301\225\344\255\114$$ \212\076\027\221\324\261\142\345\202\345\200\004\244\003\176\215 \277\332\177\242\017\227\117\014\323\015\373\327\321\345\162\176  $\label{eq:condition} $$ \034\310\167\377\133\232\017\267\256\005\106\345\361\250\026\354$$ \107\244\027\002\003\001\000\001\243\201\366\060\201\363\060\201 \260\006\003\125\035\021\004\201\250\060\201\245\201\017\151\156  $\\ 146 \\ 157 \\ 100 \\ 151 \\ 172 \\ 145 \\ 156 \\ 160 \\ 145 \\ 056 \\ 143 \\ 157 \\ 155 \\ 244 \\ 201 \\ 221 \\$ \060\201\216\061\107\060\105\006\003\125\004\012\014\076\111\132 \105\116\120\105\040\123\056\101\056\040\055\040\103\111\106\040 \101\060\061\063\063\067\062\066\060\055\122\115\145\162\143\056 \126\151\164\157\162\151\141\055\107\141\163\164\145\151\172\040 \124\061\060\065\065\040\106\066\062\040\123\070\061\103\060\101 \006\003\125\004\011\014\072\101\166\144\141\040\144\145\154\040 \115\145\144\151\164\145\162\162\162\141\156\145\157\040\105\164\157  $\label{eq:condition} $$ 162\142\151\144\145\141\040\061\064\040\055\040\060\061\060\061$ \060\040\126\151\164\157\162\151\141\055\107\141\163\164\145\151 \172\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001 \001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002 \001\006\060\035\006\003\125\035\016\004\026\004\024\035\034\145 \016\250\362\045\173\264\221\317\344\261\261\346\275\125\164\154 \005\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  $\label{eq:condition} $$ \003\202\002\001\000\170\246\014\026\112\237\114\210\072\300\313 $$$  $\label{eq:condition} $$ \016\245\026\175\237\271\110\137\030\217\015\142\066\366\315\031 $$$ \153\254\253\325\366\221\175\256\161\363\077\263\016\170\205\233 \225\244\047\041\107\102\112\174\110\072\365\105\174\263\014\216 \121\170\254\225\023\336\306\375\175\270\032\220\114\253\222\003 \307\355\102\001\316\017\330\261\372\242\222\341\140\155\256\172 \153\011\252\306\051\356\150\111\147\060\200\044\172\061\026\071 \133\176\361\034\056\335\154\011\255\362\061\301\202\116\271\273 \371\276\277\052\205\077\300\100\243\072\131\374\131\113\074\050 \044\333\264\025\165\256\015\210\272\056\163\300\275\130\207\345 \102\362\353\136\356\036\060\042\231\313\067\321\304\041\154\201

\354\276\155\046\346\034\344\102\040\236\107\260\254\203\131\160 \054\065\326\257\066\064\264\315\073\370\062\250\357\343\170\211 \373\215\105\054\332\234\270\176\100\034\141\347\076\242\222\054 \113\362\315\372\230\266\051\377\363\362\173\251\037\056\240\223 \127\053\336\205\003\371\151\067\313\236\170\152\005\264\305\061 \170\211\354\172\247\205\341\271\173\074\336\276\036\171\204\316 \237\160\016\131\302\065\056\220\052\061\331\344\105\172\101\244  $\label{eq:condition} $$ \056\023\233\064\016\146\173\111\253\144\227\320\106\303\171\235$ \162\120\143\246\230\133\006\275\110\155\330\071\203\160\350\065 \360\005\321\252\274\343\333\310\002\352\174\375\202\332\302\133 \122\065\256\230\072\255\272\065\223\043\247\037\110\335\065\106 \230\262\020\150\344\245\061\302\012\130\056\031\201\020\311\120 \165\374\352\132\026\316\021\327\356\357\120\210\055\141\377\077  $\label{eq:condition} $$ 102\163\005\224\103\325\216\074\116\001\072\031\245\037\106\116$$ \167\320\135\345\201\042\041\207\376\224\175\204\330\223\255\326 \150\103\110\262\333\353\163\044\347\221\177\124\244\266\200\076 \235\243\074\114\162\302\127\304\240\324\314\070\047\316\325\006 \236\242\110\331\351\237\316\202\160\066\223\232\073\337\226\041 \343\131\267\014\332\221\067\360\375\131\132\263\231\310\151\154  $\label{eq:condition} $$ 103\046\001\065\143\140\125\211\003\072\165\330\272\112\331\124 $$$ \377\356\336\200\330\055\321\070\325\136\055\013\230\175\076\154 \333\374\046\210\307

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "Izenpe.com"
```

- # Issuer: CN=Izenpe.com,O=IZENPE S.A.,C=ES
- # Serial Number:00:b0:b7:5a:16:48:5f:bf:e1:cb:f5:8b:d7:19:e6:7d
- # Subject: CN=Izenpe.com,O=IZENPE S.A.,C=ES
- # Not Valid Before: Thu Dec 13 13:08:28 2007
- # Not Valid After: Sun Dec 13 08:27:25 2037
- # Fingerprint (SHA-256):
- 25:30:CC:8E:98:32:15:02:BA:D9:6F:9B:1F:BA:1B:09:9E:2D:29:9E:0F:45:48:BB:91:4F:36:3B:C0:D4:53:1F
- # Fingerprint (SHA1): 2F:78:3D:25:52:18:A7:4A:65:39:71:B5:2C:A2:9C:45:15:6F:E9:19
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- ${\sf CKA\_MODIFIABLE}\ {\sf CK\_BBOOL}\ {\sf CK\_FALSE}$
- CKA\_LABEL UTF8 "Izenpe.com"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL
- \057\170\075\045\122\030\247\112\145\071\161\265\054\242\234\105 \025\157\351\031

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\246\260\315\205\200\332\134\120\064\243\071\220\057\125\147\163

**END** 

```
CKA ISSUER MULTILINE OCTAL
\060\070\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\\ \  \langle 024 \rangle 060 \rangle 022 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 012 \rangle 014 \rangle 013 \rangle 111 \rangle 132 \rangle 105 \rangle 116 \rangle 120 \rangle 105 \rangle 125 \rangle 125
\label{eq:condition} $$ \040\123\056\101\056\061\023\060\021\006\003\125\004\003\014\012 $$
\111\172\145\156\160\145\056\143\157\155
END
CKA SERIAL NUMBER MULTILINE OCTAL
\label{eq:condition} $$ \020\000\260\267\132\026\110\137\277\341\313\365\213\327\031 $$
\346\175
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
 # Certificate "Chambers of Commerce Root - 2008"
# Issuer: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
 (see current address at www.camerfirma.com/address),C=EU
 # Serial Number:00:a3:da:42:7e:a4:b1:ae:da
# Subject: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
 (see current address at www.camerfirma.com/address),C=EU
 # Not Valid Before: Fri Aug 01 12:29:50 2008
# Not Valid After: Sat Jul 31 12:29:50 2038
# Fingerprint (SHA-256):
 06:3E:4A:FA:C4:91:DF:D3:32:F3:08:9B:85:42:E9:46:17:D8:93:D7:FE:94:4E:10:A7:93:7E:E2:9D:96:93:C0
# Fingerprint (SHA1): 78:6A:74:AC:76:AB:14:7F:9C:6A:30:50:BA:9E:A8:7E:FE:9A:CE:3C
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA LABEL UTF8 "Chambers of Commerce Root - 2008"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\125
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151
 \\ 144 \\ 040 \\ 050 \\ 163 \\ 145 \\ 145 \\ 040 \\ 143 \\ 165 \\ 162 \\ 162 \\ 145 \\ 156 \\ 164 \\ 040 \\ 141 \\
 \\ 144 \\ 144 \\ 162 \\ 145 \\ 163 \\ 163 \\ 040 \\ 141 \\ 164 \\ 040 \\ 167 \\ 167 \\ 167 \\ 056 \\ 143 \\ 141 \\ 144 \\ 144 \\ 144 \\ 164 \\ 164 \\ 167 \\ 1
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155
\141\040\123\056\101\056\061\051\060\047\006\003\125\004\003\023
\040\103\150\141\155\142\145\162\163\040\157\146\040\103\157\155
\155\145\162\143\145\040\122\157\157\164\040\055\040\062\060\060
\070
```

**END** 

#### CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

 $\label{eq:control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_co$ 

**END** 

## CKA SERIAL NUMBER MULTILINE OCTAL

\002\011\000\243\332\102\176\244\261\256\332

**END** 

## CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \0.060\202\007\117\060\202\005\067\240\003\002\001\002\002\011\000$ \243\332\102\176\244\261\256\332\060\015\006\011\052\206\110\206 \367\015\001\001\005\005\000\060\201\256\061\013\060\011\006\003 \023\072\115\141\144\162\151\144\040\050\163\145\145\040\143\165 \162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164 \040\167\167\167\056\143\141\155\145\162\146\151\162\155\141\056 \143\157\155\057\141\144\144\162\145\163\163\051\061\022\060\020 \006\003\125\004\005\023\011\101\070\062\067\064\063\062\070\067 \061\033\060\031\006\003\125\004\012\023\022\101\103\040\103\141 \155\145\162\146\151\162\155\141\040\123\056\101\056\061\051\060  $\\ \\047\\ \\006\\ \\003\\ \\125\\ \\004\\ \\003\\ \\023\\ \\040\\ \\103\\ \\150\\ \\141\\ \\155\\ \\142\\ \\145\\ \\162\\ \\163$ \040\157\146\040\103\157\155\155\145\162\143\145\040\122\157\157 \164\040\055\040\062\060\060\070\060\036\027\015\060\070\060\070 \060\061\061\062\062\071\065\060\132\027\015\063\070\060\067\063 \061\061\062\062\071\065\060\132\060\201\256\061\013\060\011\006 \003\125\004\006\023\002\105\125\061\103\060\101\006\003\125\004 \007\023\072\115\141\144\162\151\144\040\050\163\145\145\040\143 \165\162\162\145\156\164\040\141\144\144\162\145\163\163\040\141  $\label{eq:condition} $$ 164\040\167\167\167\056\143\141\155\145\162\146\151\162\155\141 $$$  $\begin{tabular}{l} $$ \begin{tabular}{l} $0.56 \ 1.43 \ 1.57 \ 1.55 \ 0.57 \ 1.41 \ 1.44 \ 1.44 \ 1.62 \ 1.45 \ 1.63 \ 1.63 \ 0.51 \ 0.61 \ 0.22 \ 0.60 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \ 0.66 \$ \020\006\003\125\004\005\023\011\101\070\062\067\064\063\062\070 \067\061\033\060\031\006\003\125\004\012\023\022\101\103\040\103 \141\155\145\162\146\151\162\155\141\040\123\056\101\056\061\051 \060\047\006\003\125\004\003\023\040\103\150\141\155\142\145\162 \163\040\157\146\040\103\157\155\155\145\162\143\145\040\122\157 \157\164\040\055\040\062\060\060\070\060\202\002\042\060\015\006 \011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017 \000\060\202\002\012\002\202\002\001\000\257\000\313\160\067\053

\200\132\112\072\154\170\224\175\243\177\032\037\366\065\325\275 \333\313\015\104\162\076\046\262\220\122\272\143\073\050\130\157 \245\263\155\224\246\363\335\144\014\125\366\366\347\362\042\042 \200\136\341\142\306\266\051\341\201\154\362\277\345\175\062\152 \124\240\062\031\131\376\037\213\327\075\140\206\205\044\157\343  $\label{eq:condition} $$ \021\263\167\076\040\226\065\041\153\263\010\331\160\056\144\367 $$$ \204\222\123\326\016\260\220\212\212\343\207\215\006\323\275\220 \016\342\231\241\033\206\016\332\232\012\273\013\141\120\006\122 \361\236\177\166\354\313\017\320\036\015\317\231\060\075\034\304 \105\020\130\254\326\323\350\327\345\352\305\001\007\167\326\121  $\label{eq:condition} $$ 346\003\177\212\110\245\115\150\165\271\351\274\236\116\031\161 $$$ \365\062\113\234\155\140\031\013\373\314\235\165\334\277\046\315 \217\223\170\071\171\163\136\045\016\312\134\353\167\022\007\313 \144\101\107\162\223\253\120\303\353\011\166\144\064\322\071\267  $\label{eq:condition} $$ 166\021\011\015\166\105\304\251\256\075\152\257\265\175\145\057$$$ \224\130\020\354\134\174\257\176\342\266\030\331\320\233\116\132  $\label{eq:condition} $$ \frac{37}{251}146 \frac{314}{074}\frac{306}{170}\frac{174}{247}\frac{34}{035}\frac{343}{316}\frac{16}{216} $$$ \123\276\005\336\140\017\153\345\032\333\077\343\341\041\311\051 \301\361\353\007\234\122\033\001\104\121\074\173\045\327\304\345 \122\124\135\045\007\312\026\040\270\255\344\101\356\172\010\376 \231\157\203\246\221\002\260\154\066\125\152\347\175\365\226\346 \312\201\326\227\361\224\203\351\355\260\261\153\022\151\036\254  $\label{eq:condition} $$ \frac{373}135 \cdot 251 \cdot 305 \cdot 230 \cdot 351 \cdot 264 \cdot 133 \cdot 130 \cdot 172 \cdot 276 \cdot 075 \cdot 242 \cdot 104 \cdot 072 \cdot 143 \cdot 136 \cdot 126 \cdot 126$ \131\324\013\045\336\033\117\275\345\001\236\315\322\051\325\237  $\label{eq:condition} $$ \027\031\012\157\277\014\220\323\011\137\331\343\212\065\314\171 $$$ \132\115\031\067\222\267\304\301\255\257\364\171\044\232\262\001 \013\261\257\134\226\363\200\062\373\134\075\230\361\240\077\112 \336\276\257\224\056\331\125\232\027\156\140\235\143\154\270\143 \311\256\201\134\030\065\340\220\273\276\074\117\067\042\271\176 \353\317\236\167\041\246\075\070\201\373\110\332\061\075\053\343 \211\365\320\265\275\176\340\120\304\022\211\263\043\232\020\061 \205\333\256\157\357\070\063\030\166\021\002\003\001\000\001\243 \202\001\154\060\202\001\150\060\022\006\003\125\035\023\001\001 \377\004\010\060\006\001\001\377\002\001\014\060\035\006\003\125 \035\016\004\026\004\024\371\044\254\017\262\265\370\171\300\372 \140\210\033\304\331\115\002\236\027\031\060\201\343\006\003\125 \035\043\004\201\333\060\201\330\200\024\371\044\254\017\262\265 \370\171\300\372\140\210\033\304\331\115\002\236\027\031\241\201 \264\244\201\261\060\201\256\061\013\060\011\006\003\125\004\006 \141\144\162\151\144\040\050\163\145\145\040\143\165\162\162\145 \156\164\040\141\144\144\162\145\163\163\040\141\164\040\167\167 \167\056\143\141\155\145\162\146\151\162\155\141\056\143\157\155 \057\141\144\144\162\145\163\163\051\061\022\060\020\006\003\125 \004\005\023\011\101\070\062\067\064\063\062\070\067\061\033\060 \031\006\003\125\004\012\023\022\101\103\040\103\141\155\145\162 \146\151\162\155\141\040\123\056\101\056\061\051\060\047\006\003 

\040\103\157\155\155\145\162\143\145\040\122\157\157\164\040\055 \040\062\060\060\070\202\011\000\243\332\102\176\244\261\256\332 \060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006 \060\075\006\003\125\035\040\004\066\060\064\060\062\006\004\125 \035\040\000\060\052\060\050\006\010\053\006\001\005\005\007\002  $\label{eq:condition} $$ \001\026\034\150\164\164\160\072\057\057\160\157\154\151\143\171 $$$ \056\143\141\155\145\162\146\151\162\155\141\056\143\157\155\060  $\label{eq:condition} $$ \0.015\0.06\0.01\0.05\0.005\0.003\0.001\0.005\0.005\0.003\0.003\0.005\0.005\0.000\0.003\0.005\0.005\0.005\0.000\0.003\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\0.005\$ \002\001\000\220\022\257\042\065\302\243\071\360\056\336\351\265 \351\170\174\110\276\077\175\105\222\136\351\332\261\031\374\026  $\label{eq:condition} $$ \074\237\264\133\146\236\152\347\303\271\135\210\350\017\255\317 $$$  $\label{eq:condition} $$ \043\017\336\045\072\136\314\117\245\301\265\055\254\044\322\130 $$$ \007\336\242\317\151\204\140\063\350\020\015\023\251\043\320\205 \345\216\173\246\236\075\162\023\162\063\365\252\175\306\143\037  $\label{eq:condition} $$ \010\364\376\001\177\044\317\053\054\124\011\336\342\053\155\222 $$$ \306\071\117\026\352\074\176\172\106\324\105\152\106\250\353\165 \202\126\247\253\240\174\150\023\063\366\235\060\360\157\047\071 \044\043\052\220\375\220\051\065\362\223\337\064\245\306\367\370 \357\214\017\142\112\174\256\323\365\124\370\215\266\232\126\207  $\label{eq:condition} $$ \026\202\072\063\253\132\042\010\367\202\272\352\056\340\107\232$ \264\265\105\243\005\073\331\334\056\105\100\073\352\334\177\350 \073\353\321\354\046\330\065\244\060\305\072\254\127\236\263\166  $\label{eq:condition} $$ \245\040\173\371\036\112\005\142\001\246\050\165\140\227\222\015$$ \156\076\115\067\103\015\222\025\234\030\042\315\121\231\240\051  $\label{eq:condition} $$ \032\074\137\212\062\063\133\060\307\211\057\107\230\017\243\003$ \306\366\361\254\337\062\360\331\201\032\344\234\275\366\200\024 \360\321\054\271\205\365\330\243\261\310\245\041\345\034\023\227 \356\016\275\337\051\251\357\064\123\133\323\344\152\023\204\006 \266\062\002\304\122\256\042\322\334\262\041\102\032\332\100\360 \051\311\354\012\014\134\342\320\272\314\110\323\067\012\314\022  $\label{eq:condition} $$ \012\212\171\260\075\003\177\151\113\364\064\040\175\263\064\352 $$$ \216\113\144\365\076\375\263\043\147\025\015\004\270\360\055\301 \011\121\074\262\154\025\360\245\043\327\203\164\344\345\056\311 \376\230\047\102\306\253\306\236\260\320\133\070\245\233\120\336 \176\030\230\265\105\073\366\171\264\350\367\032\173\006\203\373 \320\213\332\273\307\275\030\253\010\157\074\200\153\100\077\031 \031\272\145\212\346\276\325\134\323\066\327\357\100\122\044\140  $\label{eq:condition} $$ \sqrt{070}147 \004 \061 \354 \217 \363 \202 \306 \336 \271 \125 \363 \073 \061 \221$  $\label{eq:condition} $$ 132\334\265\010\025\255\166\045\012\015\173\056\207\342\014\246$  $\label{eq:condition} $$ \006\274\046\020\155\067\235\354\335\170\214\174\200\305\360\331 $$$ \167\110\320

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Chambers of Commerce Root - 2008"

<sup>#</sup> Issuer: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid

```
(see current address at www.camerfirma.com/address),C=EU
# Serial Number:00:a3:da:42:7e:a4:b1:ae:da
# Subject: CN=Chambers of Commerce Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid
(see current address at www.camerfirma.com/address),C=EU
# Not Valid Before: Fri Aug 01 12:29:50 2008
# Not Valid After: Sat Jul 31 12:29:50 2038
# Fingerprint (SHA-256):
06:3E:4A:FA:C4:91:DF:D3:32:F3:08:9B:85:42:E9:46:17:D8:93:D7:FE:94:4E:10:A7:93:7E:E2:9D:96:93:C0
# Fingerprint (SHA1): 78:6A:74:AC:76:AB:14:7F:9C:6A:30:50:BA:9E:A8:7E:FE:9A:CE:3C
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Chambers of Commerce Root - 2008"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\170\152\164\254\166\253\024\177\234\152\060\120\272\236\250\176
\376\232\316\074
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\136\200\236\204\132\016\145\013\027\002\363\125\030\052\076\327
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\201\256\061\013\060\011\006\003\125\004\006\023\002\105\125
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155
\141\040\123\056\101\056\061\051\060\047\006\003\125\004\003\023
\040\103\150\141\155\142\145\162\163\040\157\146\040\103\157\155
\155\145\162\143\145\040\122\157\157\164\040\055\040\062\060\060
\070
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\011\000\243\332\102\176\244\261\256\332
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Global Chambersign Root - 2008"
# Issuer: CN=Global Chambersign Root - 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see
current address at www.camerfirma.com/address),C=EU
```

- # Serial Number:00:c9:cd:d3:e9:d5:7d:23:ce
- # Subject: CN=Global Chambersign Root 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid

(see current address at www.camerfirma.com/address),C=EU

- # Not Valid Before: Fri Aug 01 12:31:40 2008 # Not Valid After : Sat Jul 31 12:31:40 2038
- # Fingerprint (SHA-256):

13:63:35:43:93:34:A7:69:80:16:A0:D3:24:DE:72:28:4E:07:9D:7B:52:20:BB:8F:BD:74:78:16:EE:BE:BA:CA

# Fingerprint (SHA1): 4A:BD:EE:EC:95:0D:35:9C:89:AE:C7:52:A1:2C:5B:29:F6:D6:AA:0C

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "Global Chambersign Root - 2008"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125$ 

 $\label{eq:condition} $$ \061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151 $$$ 

\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141

\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141

 $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ 

\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011

\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125

 $\\ \\004\\012\\023\\022\\101\\103\\040\\103\\141\\155\\145\\162\\146\\151\\162\\155$ 

\141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023

 $\\ \\ 036\\ \\ 107\\ \\ 154\\ \\ 157\\ \\ 142\\ \\ 141\\ \\ 154\\ \\ 040\\ \\ 103\\ \\ 150\\ \\ 141\\ \\ 155\\ \\ 142\\ \\ 145\\ \\ 162\\ \\ 163$ 

\151\147\156\040\122\157\157\164\040\055\040\062\060\060\070

**END** 

CKA\_ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

\060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125

 $\label{eq:condition} $$ \061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151 $$$ 

 $\\ 144 \\ 040 \\ 050 \\ 163 \\ 145 \\ 145 \\ 040 \\ 143 \\ 165 \\ 162 \\ 162 \\ 145 \\ 156 \\ 164 \\ 040 \\ 141 \\ 141 \\ 142 \\ 143 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 1$ 

\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141

\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144

 $\label{eq:condition} $$ 162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011 $$$ 

\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125

 $\\ \\004\\012\\023\\022\\101\\103\\040\\103\\141\\155\\145\\162\\146\\151\\162\\155$ 

 $\label{eq:condition} $$ 141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023$$ 

 $\label{eq:condition} $$ \036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163$$ 

 $\label{thm:limit} $$ 151\147\156\040\122\157\157\164\040\055\040\062\060\060\070$$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\311\315\323\351\325\175\043\316

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\060\202\007\111\060\202\005\061\240\003\002\001\002\002\011\000 \311\315\323\351\325\175\043\316\060\015\006\011\052\206\110\206

\367\015\001\001\005\005\000\060\201\254\061\013\060\011\006\003

\125\004\006\023\002\105\125\061\103\060\101\006\003\125\004\007 \023\072\115\141\144\162\151\144\040\050\163\145\145\040\143\165 \162\162\145\156\164\040\141\144\144\162\145\163\163\040\141\164 \040\167\167\167\056\143\141\155\145\162\146\151\162\155\141\056 \143\157\155\057\141\144\144\162\145\163\163\051\061\022\060\020 \006\003\125\004\005\023\011\101\070\062\067\064\063\062\070\067 \061\033\060\031\006\003\125\004\012\023\022\101\103\040\103\141 \155\145\162\146\151\162\155\141\040\123\056\101\056\061\047\060  $\\ \\045\\ \\006\\ \\003\\ \\125\\ \\004\\ \\003\\ \\023\\ \\036\\ \\107\\ \\154\\ \\157\\ \\142\\ \\141\\ \\154\\ \\040\\ \\103$ \150\141\155\142\145\162\163\151\147\156\040\122\157\157\164\040 \055\040\062\060\060\070\060\036\027\015\060\070\060\070\060\061  $\label{eq:condition} $$ \061\062\063\061\064\060\132\027\015\063\070\060\067\063\061\061$ \062\063\061\064\060\132\060\201\254\061\013\060\011\006\003\125 \004\006\023\002\105\125\061\103\060\101\006\003\125\004\007\023 \162\145\156\164\040\141\144\144\162\145\163\163\040\141\164\040 \157\155\057\141\144\144\162\145\163\163\051\061\022\060\020\006 \003\125\004\005\023\011\101\070\062\067\064\063\062\070\067\061  $\label{eq:condition} $$ \03\060\031\006\003\125\004\012\023\022\101\103\040\103\141\155$ \145\162\146\151\162\155\141\040\123\056\101\056\061\047\060\045 \006\003\125\004\003\023\036\107\154\157\142\141\154\040\103\150  $\\ 141\\155\\142\\145\\162\\163\\151\\147\\156\\040\\122\\157\\157\\164\\040\\055$ \040\062\060\060\070\060\202\002\042\060\015\006\011\052\206\110 \206\367\015\001\001\001\005\000\003\202\002\017\000\060\202\002 \012\002\202\002\001\000\300\337\126\323\344\072\233\166\105\264 \023\333\377\301\266\031\213\067\101\030\225\122\107\353\027\235  $\label{eq:condition} $$ \051\210\216\065\154\006\062\056\107\142\363\111\004\277\175\104 $$$ \066\261\161\314\275\132\011\163\325\331\205\104\377\221\127\045 \337\136\066\216\160\321\134\161\103\035\331\332\357\134\322\373  $\label{eq:condition} $$ \033\275\072\265\313\255\243\314\104\247\015\256\041\025\077\271 $$$ \172\133\222\165\330\244\022\070\211\031\212\267\200\322\342\062 \157\126\234\221\326\210\020\013\263\164\144\222\164\140\363\366 \317\030\117\140\262\043\320\307\073\316\141\113\231\217\302\014 \320\100\262\230\334\015\250\116\243\271\012\256\140\240\255\105 \122\143\272\146\275\150\340\371\276\032\250\201\273\036\101\170 \165\323\301\376\000\125\260\207\124\350\047\220\065\035\114\063 \255\227\374\227\056\230\204\277\054\311\243\277\321\230\021\024  $\label{eq:condition} $$ \frac{355}{143}\frac{370}{312}\frac{230}{210}\frac{130}{027}\frac{231}{355}\frac{003}{227}\frac{176}{074}\frac{206}{206} $$$  $\label{eq:condition} $$ \036\210\214\276\362\221\204\217\145\064\330\000\114\175\267\061$$$ \027\132\051\172\012\030\044\060\243\067\265\172\251\001\175\046 \326\371\016\216\131\361\375\033\063\265\051\073\027\073\101\266  $\\ \\ \langle 041 \rangle 335 \rangle 324 \rangle 300 \rangle 075 \rangle 245 \rangle 237 \rangle 237 \rangle 037 \rangle 103 \rangle 120 \rangle 311 \rangle 273 \rangle 274 \rangle 154 \rangle 172 \rangle 172 \rangle 173 \rangle 173$ \227\230\356\315\214\037\373\234\121\256\213\160\275\047\237\161 \300\153\254\175\220\146\350\327\135\072\015\260\325\302\215\325 \310\235\235\301\155\320\320\277\121\344\343\370\303\070\066\256 \326\247\165\346\257\204\103\135\223\222\014\152\007\336\073\035 \230\042\326\254\301\065\333\243\240\045\377\162\265\166\035\336

\155\351\054\146\054\122\204\320\105\222\316\034\345\345\063\035 \334\007\123\124\243\252\202\073\232\067\057\334\335\240\144\351 \346\335\275\256\374\144\205\035\074\247\311\006\336\204\377\153 \350\153\032\074\305\242\263\102\373\213\011\076\137\010\122\307 \142\304\324\005\161\277\304\144\344\370\241\203\350\076\022\233 \250\036\324\066\115\057\161\366\215\050\366\203\251\023\322\141 \301\221\273\110\300\064\217\101\214\113\114\333\151\022\377\120 \224\234\040\203\131\163\355\174\241\362\361\375\335\367\111\323 \103\130\240\126\143\312\075\075\345\065\126\131\351\016\312\040 \314\053\113\223\051\017\002\003\001\000\001\243\202\001\152\060 \202\001\146\060\022\006\003\125\035\023\001\001\377\004\010\060  $\label{eq:condition} $$ \006\001\001\377\002\001\014\060\035\006\003\125\035\016\004\026$ \004\024\271\011\312\234\036\333\323\154\072\153\256\355\124\361 \133\223\006\065\056\136\060\201\341\006\003\125\035\043\004\201 \331\060\201\326\200\024\271\011\312\234\036\333\323\154\072\153 \256\355\124\361\133\223\006\065\056\136\241\201\262\244\201\257  $\label{eq:condition} $$ \060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125$ \061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151 \144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141  $\\ 144 \\ 144 \\ 162 \\ 145 \\ 163 \\ 163 \\ 040 \\ 141 \\ 164 \\ 040 \\ 167 \\ 167 \\ 167 \\ 056 \\ 143 \\ 141 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 144 \\ 1$ \155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144 \162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011  $\label{eq:condition} $$ 101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125$$ \004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155 \141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023 \036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163 \151\147\156\040\122\157\157\164\040\055\040\062\060\060\070\202  $\label{eq:condition} $$ \011\000\311\315\323\351\325\175\043\316\060\016\006\003\125\035 $$$ \017\001\001\377\004\004\003\002\001\006\060\075\006\003\125\035 \040\004\066\060\064\060\062\006\004\125\035\040\000\060\052\060  $\label{eq:condition} $$ \0.050\0.06\0.01\0.05\0.05\0.007\0.02\0.01\0.26\0.34\1.50\1.64\1.64$ \160\072\057\057\160\157\154\151\143\171\056\143\141\155\145\162 \146\151\162\155\141\056\143\157\155\060\015\006\011\052\206\110 \206\367\015\001\001\005\005\000\003\202\002\001\000\200\210\177 \160\336\222\050\331\005\224\106\377\220\127\251\361\057\337\032 \015\153\372\174\016\034\111\044\171\047\330\106\252\157\051\131 \122\210\160\022\352\335\075\365\233\123\124\157\341\140\242\250 \011\271\354\353\131\174\306\065\361\334\030\351\361\147\345\257 \272\105\340\011\336\312\104\017\302\027\016\167\221\105\172\063 \137\137\226\054\150\213\301\107\217\230\233\075\300\354\313\365 \325\202\222\204\065\321\276\066\070\126\162\061\133\107\055\252 \027\244\143\121\353\012\001\255\177\354\165\236\313\241\037\361  $\label{eq:condition} $$ \frac{177}022\\261\\271\\344\\144\\177\\147\\326\\043\\052\\364\\270\\071\\135\\230$ \350\041\247\341\275\075\102\032\164\232\160\257\150\154\120\135 \111\317\377\373\016\135\346\054\107\327\201\072\131\000\265\163 \153\143\040\366\061\105\010\071\016\364\160\176\100\160\132\077 \320\153\102\251\164\075\050\057\002\155\165\162\225\011\215\110 \143\306\306\043\127\222\223\136\065\301\215\371\012\367\054\235

\142\034\366\255\174\335\246\061\036\266\261\307\176\205\046\372 \244\152\265\332\143\060\321\357\223\067\262\146\057\175\005\367 \347\267\113\230\224\065\300\331\072\051\301\235\262\120\063\035 \112\251\132\246\311\003\357\355\364\347\250\156\212\264\127\204 \353\244\077\320\356\252\252\207\133\143\350\223\342\153\250\324 \270\162\170\153\033\355\071\344\135\313\233\252\207\325\117\116 \000\376\331\152\237\074\061\017\050\002\001\175\230\350\247\260 \242\144\236\171\370\110\362\025\251\314\346\310\104\353\077\170 \231\362\173\161\076\074\361\230\247\305\030\022\077\346\273\050 \063\102\351\105\012\174\155\362\206\171\057\305\202\031\175\011 \211\174\262\124\166\210\256\336\301\363\314\341\156\333\061\326 \223\256\231\240\357\045\152\163\230\211\133\072\056\023\210\036 \277\300\222\224\064\033\343\047\267\213\036\157\102\377\347\351  $\label{eq:condition} $$ \055\242\371\002\356\313\130\130\072\161\274\150$$ \343\252\301\257\034\050\037\242\334\043\145\077\201\352\256\231 \323\330\060\317\023\015\117\025\311\204\274\247\110\055\370\060 \043\167\330\106\113\171\155\366\214\355\072\177\140\021\170\364 \351\233\256\325\124\300\164\200\321\013\102\237\301 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Global Chambersign Root 2008"
- # Issuer: CN=Global Chambersign Root 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see current address at www.camerfirma.com/address),C=EU
- # Serial Number:00:c9:cd:d3:e9:d5:7d:23:ce
- # Subject: CN=Global Chambersign Root 2008,O=AC Camerfirma S.A.,serialNumber=A82743287,L=Madrid (see current address at www.camerfirma.com/address),C=EU
- # Not Valid Before: Fri Aug 01 12:31:40 2008
- # Not Valid After: Sat Jul 31 12:31:40 2038
- # Fingerprint (SHA-256):
- 13:63:35:43:93:34:A7:69:80:16:A0:D3:24:DE:72:28:4E:07:9D:7B:52:20:BB:8F:BD:74:78:16:EE:BE:BA:CA
- # Fingerprint (SHA1): 4A:BD:EE:EC:95:0D:35:9C:89:AE:C7:52:A1:2C:5B:29:F6:D6:AA:0C

 ${\tt CKA\_CLASS\ CK\_OBJECT\_CLASS\ CKO\_NSS\_TRUST}$ 

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Global Chambersign Root - 2008"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\112\275\356\354\225\015\065\234\211\256\307\122\241\054\133\051

 $\hspace{0.25cm} \hspace{0.25cm} \hspace{0.$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\236\200\377\170\001\014\056\301\066\275\376\226\220\156\010\363

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\254\061\013\060\011\006\003\125\004\006\023\002\105\125

```
\061\103\060\101\006\003\125\004\007\023\072\115\141\144\162\151
\144\040\050\163\145\145\040\143\165\162\162\145\156\164\040\141
\144\144\162\145\163\163\040\141\164\040\167\167\167\056\143\141
\155\145\162\146\151\162\155\141\056\143\157\155\057\141\144\144
\162\145\163\163\051\061\022\060\020\006\003\125\004\005\023\011
\101\070\062\067\064\063\062\070\067\061\033\060\031\006\003\125
\004\012\023\022\101\103\040\103\141\155\145\162\146\151\162\155
\label{eq:condition} $$ 141\040\123\056\101\056\061\047\060\045\006\003\125\004\003\023
\036\107\154\157\142\141\154\040\103\150\141\155\142\145\162\163
\151\147\156\040\122\157\157\164\040\055\040\062\060\060\070
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\011\000\311\315\323\351\325\175\043\316
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "Go Daddy Root Certificate Authority - G2"
# Issuer: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US
# Serial Number: 0 (0x0)
# Subject: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Not Valid Before: Tue Sep 01 00:00:00 2009
# Not Valid After: Thu Dec 31 23:59:59 2037
# Fingerprint (SHA-256):
45:14:0B:32:47:EB:9C:C8:C5:B4:F0:D7:B5:30:91:F7:32:92:08:9E:6E:5A:63:E2:74:9D:D3:AC:A9:19:8E:DA
# Fingerprint (SHA1): 47:BE:AB:C9:22:EA:E8:0E:78:78:34:62:A7:9F:45:C2:54:FD:E6:8B
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Go Daddy Root Certificate Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123
\label{eq:condition} $$ \0061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157 $$
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012
\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111
\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157
\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164
\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164
\171\040\055\040\107\062
END
```

#### CKA ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000\201\203\0061\013\006\011\0006\003\125\004\0006\023\002\125\123\061\020\006\0016\0006\003\125\004\0007\023\012\123\143\157\156\141\061\023\060\021\006\003\125\0004\0007\023\012\123\143\157\164\164\163\144\141\154\145\061\032\060\030\0006\003\125\0004\012\023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111\156\143\056\061\061\060\057\0006\003\125\0004\003\023\050\107\157\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\151\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040\107\062$ 

**END** 

CKA SERIAL NUMBER MULTILINE OCTAL

\002\001\000

**END** 

### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\003\305\060\202\002\255\240\003\002\001\0002\0001\000$ \060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060 \201\203\061\013\060\011\006\003\125\004\006\023\002\125\123\061  $\label{eq:condition} $$ \020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156$$ \141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164 \164\163\144\141\154\145\061\032\060\030\006\003\125\004\012\023  $\\ \\ \langle 021 | 107 | 157 | 104 | 141 | 144 | 144 | 171 | 056 | 143 | 157 | 155 | 054 | 040 | 111 | 156 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164 | 164$ \143\056\061\061\060\057\006\003\125\004\003\023\050\107\157\040 \104\141\144\144\171\040\122\157\157\164\040\103\145\162\164\151 \146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171 \040\055\040\107\062\060\036\027\015\060\071\060\071\060\061\060 \060\060\060\060\060\132\027\015\063\067\061\062\063\061\062\063 \065\071\065\071\132\060\201\203\061\013\060\011\006\003\125\004 \006\023\002\125\123\061\020\060\016\006\003\125\004\010\023\007  $\label{eq:condition} $$ 101\162\151\172\157\156\141\061\023\060\021\006\003\125\004\007 $$$ \023\012\123\143\157\164\164\163\144\141\154\145\061\032\060\030 \006\003\125\004\012\023\021\107\157\104\141\144\144\171\056\143 \157\155\054\040\111\156\143\056\061\061\060\057\006\003\125\004 \003\023\050\107\157\040\104\141\144\144\171\040\122\157\157\164 \040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164 \150\157\162\151\164\171\040\055\040\107\062\060\202\001\042\060  $\label{eq:condition} $$ \015\006\011\052\206\110\206\367\015\001\001\001\005\000\003\202 $$$  $\label{eq:condition} $$ \001\017\000\060\202\001\012\002\202\001\001\000\277\161\142\010 $$$ \361\372\131\064\367\033\311\030\243\367\200\111\130\351\042\203 \023\246\305\040\103\001\073\204\361\346\205\111\237\047\352\366 \204\033\116\240\264\333\160\230\307\062\001\261\005\076\007\116 \356\364\372\117\057\131\060\042\347\253\031\126\153\342\200\007 \374\363\026\165\200\071\121\173\345\371\065\266\164\116\251\215 \202\023\344\266\077\251\003\203\372\242\276\212\025\152\177\336 \013\303\266\031\024\005\312\352\303\250\004\224\073\106\174\062 \015\363\000\146\042\310\215\151\155\066\214\021\030\267\323\262 \034\140\264\070\372\002\214\316\323\335\106\007\336\012\076\353

\135\174\310\174\373\260\053\123\244\222\142\151\121\045\005\141 \032\104\201\214\054\251\103\226\043\337\254\072\201\232\016\051 \305\034\251\351\135\036\266\236\236\060\012\071\316\361\210\200 \373\113\135\314\062\354\205\142\103\045\064\002\126\047\001\221 \264\073\160\052\077\156\261\350\234\210\001\175\237\324\371\333 \123\155\140\235\277\054\347\130\253\270\137\106\374\316\304\033 \003\074\011\353\111\061\134\151\106\263\340\107\002\003\001\000  $\label{eq:condition} $$ \001\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004$$$ \004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004  $\label{eq:condition} $$ \024\072\232\205\007\020\147\050\266\357\366\275\005\101\156\040 $$$ \301\224\332\017\336\060\015\006\011\052\206\110\206\367\015\001 \001\013\005\000\003\202\001\001\000\231\333\135\171\325\371\227  $\label{eq:condition} $$ \frac{131}147\\003\\141\\361\\176\\073\\006\\061\\165\\055\\241\\040\\216\\117\\145$ \207\264\367\246\234\274\330\351\057\320\333\132\356\317\164\214 \163\264\070\102\332\005\173\370\002\165\270\375\245\261\327\256  $\label{eq:condition} $$ \36\327\336\023\313\123\020\176\212\106\321\227\372\267\056\053$ \021\253\220\260\047\200\371\350\237\132\351\067\237\253\344\337 \154\263\205\027\235\075\331\044\117\171\221\065\326\137\004\353 \200\203\253\232\002\055\265\020\364\330\220\307\004\163\100\355 \162\045\240\251\237\354\236\253\150\022\231\127\306\217\022\072  $\label{eq:condition} $$ \011\244\275\104\375\006\025\067\301\233\344\062\243\355\070\350 $$$  $\label{eq:condition} $$ 330\144\363\054\176\024\374\002\352\237\315\377\007\150\027\333$ \042\220\070\055\172\215\321\124\361\151\343\137\063\312\172\075 \173\012\343\312\177\137\071\345\342\165\272\305\166\030\063\316 \054\360\057\114\255\367\261\347\316\117\250\304\233\112\124\006 \305\177\175\325\010\017\342\034\376\176\027\270\254\136\366\324  $\label{eq:condition} $$ \026\262\103\011\014\115\366\247\153\264\231\204\145\312\172\210 $$$ \342\342\104\276\134\367\352\034\365

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "Go Daddy Root Certificate Authority - G2"
```

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

<sup>#</sup> Issuer: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com, Inc.",L=Scottsdale,ST=Arizona,C=US

<sup>#</sup> Serial Number: 0 (0x0)

<sup>#</sup> Subject: CN=Go Daddy Root Certificate Authority - G2,O="GoDaddy.com,

Inc.",L=Scottsdale,ST=Arizona,C=US

<sup>#</sup> Not Valid Before: Tue Sep 01 00:00:00 2009

<sup>#</sup> Not Valid After: Thu Dec 31 23:59:59 2037

<sup>#</sup> Fingerprint (SHA-256):

<sup>45:14:0</sup>B:32:47:EB:9C:C8:C5:B4:F0:D7:B5:30:91:F7:32:92:08:9E:6E:5A:63:E2:74:9D:D3:AC:A9:19:8E:DA

<sup>#</sup> Fingerprint (SHA1): 47:BE:AB:C9:22:EA:E8:0E:78:78:34:62:A7:9F:45:C2:54:FD:E6:8B

```
CKA CERT SHA1 HASH MULTILINE OCTAL
\label{eq:condition} $$ 107\276\253\311\042\352\350\016\170\170\064\142\247\237\105\302
\124\375\346\213
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\200\072\274\042\301\346\373\215\233\073\047\112\062\033\232\001
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\203\061\013\060\011\006\003\125\004\006\023\002\125\123
\label{eq:condition} $$ \006\006\003\125\004\010\023\007\101\162\151\172\157 $$
\label{eq:condition} $$ \frac{156}{141}061\\023\\060\\021\\006\\003\\125\\004\\007\\023\\012\\123\\143\\157
\164\164\163\144\141\154\145\061\032\060\030\006\003\125\004\012
\label{eq:condition} $$ \023\021\107\157\104\141\144\144\171\056\143\157\155\054\040\111 $$
\156\143\056\061\061\060\057\006\003\125\004\003\023\050\107\157
\040\104\141\144\144\171\040\122\157\157\164\040\103\145\162\164
\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "Starfield Root Certificate Authority - G2"
# Issuer: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Serial Number: 0 (0x0)
# Subject: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Not Valid Before: Tue Sep 01 00:00:00 2009
# Not Valid After: Thu Dec 31 23:59:59 2037
# Fingerprint (SHA-256):
2C:E1:CB:0B:F9:D2:F9:E1:02:99:3F:BE:21:51:52:C3:B2:DD:0C:AB:DE:1C:68:E5:31:9B:83:91:54:DB:B7:F5
# Fingerprint (SHA1): B5:1C:06:7C:EE:2B:0C:3D:F8:55:AB:2D:92:F4:FE:39:D4:E7:0F:0E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Root Certificate Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
```

CKA\_LABEL UTF8 "Go Daddy Root Certificate Authority - G2"

 $\label{eq:control} $$ \061\020\060\016\006\003\125\004\007\023\012\123\143\157\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\145\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145\154\144\040\122\157\157\164\040\103\145\162\151\164\151\146\151\143\141\164\145\040\101\165\164\157\162\151\164\171\040\055\040\107\062$ 

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:control} $$ \000\201\217\061\013\060\011\006\003\125\004\000\002\000\012\1125\1123\1142\1157\1156\1141\061\023\060\021\006\003\125\004\0007\023\012\123\1143\1157\164\164\163\144\1141\154\145\061\045\060\043\006\003\125\004\012\123\164\1141\162\146\151\1145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145\154\144\040\122\157\157\164\040\103\145\162\151\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040\107\062$ 

**END** 

CKA SERIAL NUMBER MULTILINE OCTAL

\002\001\000

**END** 

### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\003\335\060\202\002\305\240\003\002\001\0002\0001\000$ \060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060 \201\217\061\013\060\011\006\003\125\004\006\023\002\125\123\061  $\label{eq:condition} $$ \020\060\016\006\003\125\004\010\023\007\101\162\151\172\157\156$$ \141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164 \164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\023 \034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156 \157\154\157\147\151\145\163\054\040\111\156\143\056\061\062\060 \060\006\003\125\004\003\023\051\123\164\141\162\146\151\145\154 \144\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141 \164\145\040\101\165\164\150\157\162\151\164\171\040\055\040\107  $\label{eq:condition} $$ \062\060\036\027\015\060\071\060\071\060\061\060\060\060\060\060$ \060\132\027\015\063\067\061\062\063\061\062\063\065\071\065\071 \132\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125 \157\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143 \157\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004 \012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143 \150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061 \062\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151 \145\154\144\040\122\157\157\164\040\103\145\162\164\151\146\151

\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055 \040\107\062\060\202\001\042\060\015\006\011\052\206\110\206\367 \015\001\001\001\005\000\003\202\001\017\000\060\202\001\012\002  $\label{eq:condition} $$ \202\001\000\275\355\301\003\374\366\217\374\002\261\157\133 $$ \237\110\331\235\171\342\242\267\003\141\126\030\303\107\266\327 \312\075\065\056\211\103\367\241\151\233\336\212\032\375\023\040 \234\264\111\167\062\051\126\375\271\354\214\335\042\372\162\334 \047\141\227\356\366\132\204\354\156\031\271\211\054\334\204\133 \325\164\373\153\137\305\211\245\020\122\211\106\125\364\270\165 \034\346\177\344\124\256\113\370\125\162\127\002\031\370\027\161 \131\353\036\050\007\164\305\235\110\276\154\264\364\244\260\363 \144\067\171\222\300\354\106\136\177\341\155\123\114\142\257\315 \037\013\143\273\072\235\373\374\171\000\230\141\164\317\046\202 \100\143\363\262\162\152\031\015\231\312\324\016\165\314\067\373 \213\211\301\131\361\142\177\137\263\137\145\060\370\247\267\115 \166\132\036\166\136\064\300\350\226\126\231\212\263\360\177\244  $\label{eq:condition} $$ \frac{315}{275}\frac{334}{062}\frac{1174}{221}\frac{317}{340}\frac{137}{021}\frac{370}{153}\frac{252}{111}\frac{134}{134}$ \321\231\224\321\242\343\143\133\011\166\265\126\142\341\113\164 \035\226\324\046\324\010\004\131\320\230\016\016\346\336\374\303 \354\037\220\361\002\003\001\000\001\243\102\060\100\060\017\006 \003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016 \006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  $\\ \\006\\003\\125\\035\\016\\004\\026\\004\\024\\174\\014\\062\\037\\247\\331\\060$ \177\304\175\150\243\142\250\241\316\253\007\133\047\060\015\006  $\label{eq:condition} $$ \011\052\206\110\206\367\015\001\001\013\005\000\003\202\001\001 $$$ \000\021\131\372\045\117\003\157\224\231\073\232\037\202\205\071 \324\166\005\224\136\341\050\223\155\142\135\011\302\240\250\324 \260\165\070\361\064\152\235\344\237\212\206\046\121\346\054\321 \306\055\156\225\040\112\222\001\354\270\212\147\173\061\342\147 \056\214\225\003\046\056\103\235\112\061\366\016\265\014\273\267  $\label{eq:condition} $$ 342 \cdot 067 \cdot 177 \cdot 042 \cdot 272 \cdot 000 \cdot 243 \cdot 016 \cdot 173 \cdot 122 \cdot 373 \cdot 153 \cdot 273 \cdot 073 \cdot 304 \cdot 323 \cdot 122 \cdot 373 \cdot 153 \cdot 273 \cdot 073 \cdot 304 \cdot 323 \cdot 122 \cdot 373 \cdot 122 \cdot 373 \cdot 122 \cdot 373 \cdot 123 \cdot 123$ \171\121\116\315\220\364\147\007\031\310\074\106\172\015\001\175 \305\130\347\155\346\205\060\027\232\044\304\020\340\004\367\340 \362\177\324\252\012\377\102\035\067\355\224\345\144\131\022\040 \167\070\323\062\076\070\201\165\226\163\372\150\217\261\313\316 \037\305\354\372\234\176\317\176\261\361\007\055\266\374\277\312 \244\277\320\227\005\112\274\352\030\050\002\220\275\124\170\011  $\label{eq:condition} $$ \041\161\323\321\175\035\331\026\260\251\141\075\320\012\000\042 $$$ \374\307\173\313\011\144\105\013\073\100\201\367\175\174\062\365 \230\312\130\216\175\052\356\220\131\163\144\371\066\164\136\045 \241\365\146\005\056\177\071\025\251\052\373\120\213\216\205\151 \364

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Starfield Root Certificate Authority - G2"

```
# Issuer: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.".L=Scottsdale.ST=Arizona.C=US
# Serial Number: 0 (0x0)
# Subject: CN=Starfield Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Not Valid Before: Tue Sep 01 00:00:00 2009
# Not Valid After: Thu Dec 31 23:59:59 2037
# Fingerprint (SHA-256):
2C:E1:CB:0B:F9:D2:F9:E1:02:99:3F:BE:21:51:52:C3:B2:DD:0C:AB:DE:1C:68:E5:31:9B:83:91:54:DB:B7:F5
# Fingerprint (SHA1): B5:1C:06:7C:EE:2B:0C:3D:F8:55:AB:2D:92:F4:FE:39:D4:E7:0F:0E
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Starfield Root Certificate Authority - G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\265\034\006\174\356\053\014\075\370\125\253\055\222\364\376\071
\324\347\017\016
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\326\071\201\306\122\176\226\151\374\374\312\146\355\005\362\226
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\217\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\020\060\016\006\003\125\004\010\023\007\101\162\151\172\157
\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157
\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012
\\ \begin{tabular}{l} $023 \ 034 \ 123 \ 164 \ 141 \ 162 \ 146 \ 151 \ 145 \ 154 \ 144 \ 040 \ 124 \ 145 \ 143 \ 150 \ 146 \ 
\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\062
\060\060\006\003\125\004\003\023\051\123\164\141\162\146\151\145
 \\ 141\\164\\145\\040\\101\\165\\164\\150\\157\\162\\151\\164\\171\\040\\055\\040
\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "Starfield Services Root Certificate Authority - G2"
# Issuer: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,
Inc.",L=Scottsdale,ST=Arizona,C=US
# Serial Number: 0 (0x0)
```

# Subject: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,

Inc.",L=Scottsdale,ST=Arizona,C=US

# Not Valid Before: Tue Sep 01 00:00:00 2009

# Not Valid After: Thu Dec 31 23:59:59 2037

# Fingerprint (SHA-256):

56:8D:69:05:A2:C8:87:08:A4:B3:02:51:90:ED:CF:ED:B1:97:4A:60:6A:13:C6:E5:29:0F:CB:2A:E6:3E:DA:B5

# Fingerprint (SHA1): 92:5A:8F:8D:2C:6D:04:E0:66:5F:59:6A:FF:22:D8:63:E8:25:6F:3F

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Starfield Services Root Certificate Authority - G2"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\201\230\061\013\060\011\006\003\125\004\006\023\002\125\123$ 

 $\label{eq:condition} $$ \006\006\003\125\004\010\023\007\101\162\151\172\157 $$$ 

 $\label{eq:condition} $$ \frac{156}{141}061\\023\\060\\021\\006\\003\\125\\004\\007\\023\\012\\123\\143\\157$ 

\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012

\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150

 $\verb| 156| 157| 154| 157| 147| 151| 145| 163| 054| 040| 111| 156| 143| 056| 061| 073|$ 

\060\071\006\003\125\004\003\023\062\123\164\141\162\146\151\145

 $\\ \\ 040\\ \\ 103\\ \\ 145\\ \\ 162\\ \\ 164\\ \\ 151\\ \\ 146\\ \\ 151\\ \\ 143\\ \\ 141\\ \\ 164\\ \\ 145\\ \\ 040\\ \\ 101\\ \\ 165\\ \\ 164$ 

\150\157\162\151\164\171\040\055\040\107\062

**END** 

CKA\_ID UTF8 "0"

#### CKA ISSUER MULTILINE OCTAL

 $\label{eq:control} $$ \000\201\200\60\001\000\003\125\0004\0003\125\0004\0007\101\162\151\172\157\156\141\061\023\060\021\006\0003\125\0004\0007\023\0012\123\143\157\164\164\163\144\141\154\145\061\045\060\0043\006\0003\125\0004\012\023\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073\060\071\006\0003\125\0004\0003\023\062\123\164\141\162\146\151\145\151\145\163\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040\055\040\107\062$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\verb|002|001|000|$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\202\003\357\060\202\002\327\240\003\002\001\002\002\001\000 \\ 060\015\006\011\052\206\110\206\367\015\001\001\013\1005\000\060 \\ \201\230\061\013\060\011\006\0003\125\0004\0006\023\0002\125\123\061 \\ 020\060\016\0003\125\0004\010\023\0007\101\162\151\172\157\156 \\ \141\061\023\060\021\0006\0003\125\0004\0007\023\012\123\143\157\164 \\ \164\163\144\141\154\145\061\0045\060\0043\0006\0003\125\0004\012\023 \\ \end{tabular}$ 

\034\123\164\141\162\146\151\145\154\144\040\124\145\143\150\156 \157\154\157\147\151\145\163\054\040\111\156\143\056\061\073\060 \071\006\003\125\004\003\023\062\123\164\141\162\146\151\145\154 \144\040\123\145\162\166\151\143\145\163\040\122\157\157\164\040 \103\145\162\164\151\146\151\143\141\164\145\040\101\165\164\150 \157\162\151\164\171\040\055\040\107\062\060\036\027\015\060\071 \060\071\060\061\060\060\060\060\060\060\060\132\027\015\063\067\061 \062\063\061\062\063\065\071\065\071\132\060\201\230\061\013\060 \125\004\010\023\007\101\162\151\172\157\156\141\061\023\060\021 \006\003\125\004\007\023\012\123\143\157\164\164\163\144\141\154  $\label{eq:condition} $$ 145\061\045\060\043\006\003\125\004\012\023\034\123\164\141\162$ \146\151\145\154\144\040\124\145\143\150\156\157\154\157\147\151 \145\163\054\040\111\156\143\056\061\073\060\071\006\003\125\004  $\label{eq:condition} $$ \003\023\062\123\164\141\162\146\151\145\154\144\040\123\145\162$ \166\151\143\145\163\040\122\157\157\164\040\103\145\162\164\151  $\\ 146 \\ 151 \\ 143 \\ 141 \\ 164 \\ 145 \\ 040 \\ 101 \\ 165 \\ 164 \\ 150 \\ 157 \\ 162 \\ 151 \\ 164 \\ 171 \\$ \040\055\040\107\062\060\202\001\042\060\015\006\011\052\206\110 \206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001  $\label{eq:condition} $$ \012\002\202\001\000\325\014\072\304\052\371\116\342\365\276 $$$ \031\227\137\216\210\123\261\037\077\313\317\237\040\023\155\051 \072\310\017\175\074\367\153\166\070\143\331\066\140\250\233\136  $\label{eq:condition} $$ 134\000\200\262\057\131\177\366\207\371\045\103\206\347\151\033$ \122\232\220\341\161\343\330\055\015\116\157\366\310\111\331\266 \363\032\126\256\053\266\164\024\353\317\373\046\343\032\272\035 \226\056\152\073\130\224\211\107\126\377\045\240\223\160\123\203 \332\204\164\024\303\147\236\004\150\072\337\216\100\132\035\112  $\label{eq:condition} $$ \frac{317}{103}\frac{221}{073}\frac{347}{126}\frac{326}{000}\frac{160}{313}\frac{122}{356}\frac{173}{175}\frac{256}{256} $$$ \072\347\274\061\371\105\366\302\140\317\023\131\002\053\200\314 \064\107\337\271\336\220\145\155\002\317\054\221\246\246\347\336 \205\030\111\174\146\116\243\072\155\251\265\356\064\056\272\015 \003\270\063\337\107\353\261\153\215\045\331\233\316\201\321\105 \106\062\226\160\207\336\002\016\111\103\205\266\154\163\273\144 \352\141\101\254\311\324\124\337\207\057\307\042\262\046\314\237 \131\124\150\237\374\276\052\057\304\125\034\165\100\140\027\205 \002\125\071\213\177\005\002\003\001\000\001\243\102\060\100\060 \017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377 \060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  $\label{eq:condition} $$ \000\03\125\035\016\004\026\004\024\234\137\000\337\252$  $\label{eq:condition} $$ \001\327\060\053\070\210\242\270\155\112\234\362\021\221\203\060 $$$ \015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202 \001\001\000\113\066\246\204\167\151\335\073\031\237\147\043\010 \157\016\141\311\375\204\334\137\330\066\201\315\330\033\101\055 \237\140\335\307\032\150\331\321\156\206\341\210\043\317\023\336 \103\317\342\064\263\004\235\037\051\325\277\370\136\310\325\301 \275\356\222\157\062\164\362\221\202\057\275\202\102\172\255\052 \267\040\175\115\274\172\125\022\302\025\352\275\367\152\225\056 \154\164\237\317\034\264\362\305\001\243\205\320\162\076\255\163

 $\label{eq:control} $$\25\013\23\165\014\155\105\267\216\224\254\226\067\265\240\320\217\025\107\016\343\350\203\335\217\375\357\101\001\167\314\047\251\142\205\063\362\067\010\357\161\317\167\006\336\310\031\035\210\100\317\175\106\035\377\036\307\341\316\377\043\333\306\372\215\125\116\251\002\347\107\021\106\076\364\375\275\173\051\046\273\251\141\142\067\050\266\055\052\366\020\206\144\311\160\247\322\255\267\051\160\171\352\074\332\143\045\237\375\150\267\060\354\160\373\165\212\267\155\140\147\262\036\310\271\351\330\250\157\002\213\147\015\115\046\127\161\332\040\374\301\112\120\215\261\050\272$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Starfield Services Root Certificate Authority - G2"

# Issuer: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,

Inc.",L=Scottsdale,ST=Arizona,C=US

# Serial Number: 0 (0x0)

# Subject: CN=Starfield Services Root Certificate Authority - G2,O="Starfield Technologies,

Inc.",L=Scottsdale,ST=Arizona,C=US

# Not Valid Before: Tue Sep 01 00:00:00 2009 # Not Valid After : Thu Dec 31 23:59:59 2037

# Fingerprint (SHA-256):

56:8D:69:05:A2:C8:87:08:A4:B3:02:51:90:ED:CF:ED:B1:97:4A:60:6A:13:C6:E5:29:0F:CB:2A:E6:3E:DA:B5

# Fingerprint (SHA1): 92:5A:8F:8D:2C:6D:04:E0:66:5F:59:6A:FF:22:D8:63:E8:25:6F:3F

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Starfield Services Root Certificate Authority - G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\222\132\217\215\054\155\004\340\146\137\131\152\377\042\330\143 \350\045\157\077

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\\027\\065\\164\\257\\173\\141\\034\\353\\364\\371\\074\\342\\356\\100\\371\\242$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:control} $$ \000\201\230\061\013\060\011\006\003\125\004\010\023\007\101\162\151\172\157\156\141\061\023\060\021\006\003\125\004\007\023\012\123\143\157\164\164\163\144\141\154\145\061\045\060\043\006\003\125\004\012\123\143\150\156\157\154\157\147\151\145\163\054\040\111\156\143\056\061\073\154\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164\144\040\123\145\162\166\151\143\145\163\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164$ 

```
\150\157\162\151\164\171\040\055\040\107\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "AffirmTrust Commercial"
# Issuer: CN=AffirmTrust Commercial,O=AffirmTrust,C=US
# Serial Number:77:77:06:27:26:a9:b1:7c
# Subject: CN=AffirmTrust Commercial,O=AffirmTrust,C=US
# Not Valid Before: Fri Jan 29 14:06:06 2010
# Not Valid After: Tue Dec 31 14:06:06 2030
# Fingerprint (SHA-256):
03:76:AB:1D:54:C5:F9:80:3C:E4:B2:E2:01:A0:EE:7E:EF:7B:57:B6:36:E8:A9:3C:9B:8D:48:60:C9:6F:5F:A7
# Fingerprint (SHA1): F9:B5:B6:32:45:5F:9C:BE:EC:57:5F:80:DC:E9:6E:2C:C7:B2:78:B7
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "AffirmTrust Commercial"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA_SUBJECT MULTILINE_OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155
\145\162\143\151\141\154
END
CKA ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155
\145\162\143\151\141\154
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\167\167\006\047\046\251\261\174
END
CKA_VALUE MULTILINE_OCTAL
\060\202\003\114\060\202\002\064\240\003\002\001\002\002\010\167
\167\006\047\046\251\261\174\060\015\006\011\052\206\110\206\367
```

\015\001\001\001\013\005\000\060\104\061\013\060\011\006\003\125\004 \006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013 \101\146\146\151\162\155\124\162\165\163\164\061\037\060\035\006 \003\125\004\003\014\026\101\146\146\151\162\155\124\162\165\163 \164\040\103\157\155\155\145\162\143\151\141\154\060\036\027\015 \061\060\060\061\062\071\061\064\060\066\060\066\132\027\015\063 \060\061\062\063\061\061\064\060\066\060\066\132\060\104\061\013 \060\011\006\003\125\004\006\023\002\125\123\061\024\060\022\006 \164\061\037\060\035\006\003\125\004\003\014\026\101\146\146\151 \141\154\060\202\001\042\060\015\006\011\052\206\110\206\367\015 \001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202  $\label{eq:condition} $$ \001\001\000\366\033\117\147\007\053\241\025\365\006\042\313\037 $$$  $\label{eq:condition} $$ \001\262\343\163\105\006\104\111\054\273\111\045\024\326\316\303$ \267\253\054\117\306\101\062\224\127\372\022\247\133\016\342\217 \037\036\206\031\247\252\265\055\271\137\015\212\302\257\205\065 \171\062\055\273\034\142\067\362\261\133\112\075\312\315\161\137 \351\102\276\224\350\310\336\371\042\110\144\306\345\253\306\053 \155\255\005\360\372\325\013\317\232\345\360\120\244\213\073\107 \245\043\133\172\172\370\063\077\270\357\231\227\343\040\301\326 \050\211\317\224\373\271\105\355\343\100\027\021\324\164\360\013  $\label{eq:condition} $$ \061\342\053\046\152\233\114\127\256\254\040\076\272\105\172\005$ \363\275\233\151\025\256\175\116\040\143\304\065\166\072\007\002 \311\067\375\307\107\356\350\361\166\035\163\025\362\227\244\265 \310\172\171\331\102\252\053\177\134\376\316\046\117\243\146\201 \065\257\104\272\124\036\034\060\062\145\235\346\074\223\136\120 \116\172\343\072\324\156\314\032\373\371\322\067\256\044\052\253 \127\003\042\050\015\111\165\177\267\050\332\165\277\216\343\334 \016\171\061\002\003\001\000\001\243\102\060\100\060\035\006\003  $\label{eq:condition} $$ 125\035\016\004\026\004\024\235\223\306\123\213\136\312\257\077 $$$ \237\036\017\345\231\225\274\044\366\224\217\060\017\006\003\125 \035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003 \125\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011 \052\206\110\206\367\015\001\001\013\005\000\003\202\001\001\000 \130\254\364\004\016\315\300\015\377\012\375\324\272\026\137\051 \275\173\150\231\130\111\322\264\035\067\115\177\047\175\106\006 \135\103\306\206\056\076\163\262\046\175\117\223\251\266\304\052 \232\253\041\227\024\261\336\214\323\253\211\025\330\153\044\324 \361\026\256\330\244\134\324\177\121\216\355\030\001\261\223\143 \275\274\370\141\200\232\236\261\316\102\160\342\251\175\006\045 \175\047\241\376\157\354\263\036\044\332\343\113\125\032\000\073 \065\264\073\331\327\135\060\375\201\023\211\362\302\006\053\355 \147\304\216\311\103\262\134\153\025\211\002\274\142\374\116\362 \265\063\252\262\157\323\012\242\120\343\366\073\350\056\104\302 \333\146\070\251\063\126\110\361\155\033\063\215\015\214\077\140 \067\235\323\312\155\176\064\176\015\237\162\166\213\033\237\162  $\label{eq:condition} $$ \frac{375}{122}065 \frac{101}{105}002 \frac{226}{057}034 \frac{262}{232}\frac{163}{111}041 \frac{111}{261}$ 

\107\105\107\264\357\152\064\021\311\115\232\314\131\267\326\002 \236\132\116\145\265\224\256\033\337\051\260\026\361\277\000\236 \007\072\027\144\265\004\265\043\041\231\012\225\073\227\174\357 **END** CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA NSS EMAIL DISTRUST AFTER CK BBOOL CK FALSE # Trust for "AffirmTrust Commercial" # Issuer: CN=AffirmTrust Commercial.O=AffirmTrust.C=US # Serial Number:77:77:06:27:26:a9:b1:7c # Subject: CN=AffirmTrust Commercial,O=AffirmTrust,C=US # Not Valid Before: Fri Jan 29 14:06:06 2010 # Not Valid After: Tue Dec 31 14:06:06 2030 # Fingerprint (SHA-256): 03:76:AB:1D:54:C5:F9:80:3C:E4:B2:E2:01:A0:EE:7E:EF:7B:57:B6:36:E8:A9:3C:9B:8D:48:60:C9:6F:5F:A7 # Fingerprint (SHA1): F9:B5:B6:32:45:5F:9C:BE:EC:57:5F:80:DC:E9:6E:2C:C7:B2:78:B7 CKA CLASS CK OBJECT CLASS CKO NSS TRUST CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA\_PRIVATE CK\_BBOOL CK\_FALSE CKA MODIFIABLE CK BBOOL CK FALSE CKA\_LABEL UTF8 "AffirmTrust Commercial" CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL \371\265\266\062\105\137\234\276\354\127\137\200\334\351\156\054 \307\262\170\267 **END** CKA CERT MD5 HASH MULTILINE OCTAL \202\222\272\133\357\315\212\157\246\075\125\371\204\366\326\267 **END** CKA ISSUER MULTILINE OCTAL  $\label{eq:condition} $$ \060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$ \024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155 \124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026 \101\146\146\151\162\155\124\162\165\163\164\040\103\157\155\155  $\verb| 145| 162| 143| 151| 141| 154|$ **END** CKA SERIAL NUMBER MULTILINE OCTAL \002\010\167\167\006\047\046\251\261\174 **END** CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

П

# Certificate "AffirmTrust Networking"

#

# Issuer: CN=AffirmTrust Networking,O=AffirmTrust,C=US

- # Serial Number:7c:4f:04:39:1c:d4:99:2d
- # Subject: CN=AffirmTrust Networking,O=AffirmTrust,C=US
- # Not Valid Before: Fri Jan 29 14:08:24 2010
- # Not Valid After: Tue Dec 31 14:08:24 2030
- # Fingerprint (SHA-256):

0A:81:EC:5A:92:97:77:F1:45:90:4A:F3:8D:5D:50:9F:66:B5:E2:C5:8F:CD:B5:31:05:8B:0E:17:F3:F0:B4:1B

# Fingerprint (SHA1): 29:36:21:02:8B:20:ED:02:F5:66:C5:32:D1:D6:ED:90:9F:45:00:2F

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AffirmTrust Networking"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$ 

\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026

\157\162\153\151\156\147

**END** 

CKA ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155

\124\162\165\163\164\061\037\060\035\006\003\125\004\003\014\026

 $\label{eq:condition} $$ 101\146\146\151\162\155\124\162\165\163\164\040\116\145\164\167$$ 

\157\162\153\151\156\147

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

\002\010\174\117\004\071\034\324\231\055

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\114\060\202\002\064\240\003\002\001\002\002\010\174 \117\004\071\034\324\231\055\060\015\006\011\052\206\110\206\367 \015\001\001\005\005\000\060\104\061\013\060\011\006\003\125\004 \006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013 \101\146\146\151\162\155\124\162\165\163\164\061\037\060\035\006  $\\ \\003\\125\\004\\003\\014\\026\\101\\146\\146\\146\\151\\162\\155\\124\\162\\165\\163$  $\label{eq:condition} $$ 164\040\116\145\164\167\157\162\153\151\156\147\060\036\027\015$$ \060\061\062\063\061\061\064\060\070\062\064\132\060\104\061\013 \003\125\004\012\014\013\101\146\146\151\162\155\124\162\165\163 \164\061\037\060\035\006\003\125\004\003\014\026\101\146\146\151 \162\155\124\162\165\163\164\040\116\145\164\167\157\162\153\151 \156\147\060\202\001\042\060\015\006\011\052\206\110\206\367\015 \001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202 \001\001\000\264\204\314\063\027\056\153\224\154\153\141\122\240

\353\243\317\171\224\114\345\224\200\231\313\125\144\104\145\217 \147\144\342\006\343\134\067\111\366\057\233\204\204\036\055\362 \140\235\060\116\314\204\205\342\054\317\036\236\376\066\253\063 \167\065\104\330\065\226\032\075\066\350\172\016\330\325\107\241 \152\151\213\331\374\273\072\256\171\132\325\364\326\161\273\232 \220\043\153\232\267\210\164\207\014\036\137\271\236\055\372\253 \123\053\334\273\166\076\223\114\010\010\214\036\242\043\034\324 \152\255\042\272\231\001\056\155\145\313\276\044\146\125\044\113 \100\104\261\033\327\341\302\205\300\336\020\077\075\355\270\374 \361\361\043\123\334\277\145\227\157\331\371\100\161\215\175\275 \225\324\316\276\240\136\047\043\336\375\246\320\046\016\000\051  $\label{eq:condition} $$ 353\074\106\360\075\140\277\077\120\322\334\046\101\121\236\024$$ \067\102\004\243\160\127\250\033\207\355\055\372\173\356\214\012 \343\251\146\211\031\313\101\371\335\104\066\141\317\342\167\106 \310\175\366\364\222\201\066\375\333\064\361\162\176\363\014\026 \275\264\025\002\003\001\000\001\243\102\060\100\060\035\006\003 \125\035\016\004\026\004\024\007\037\322\347\234\332\302\156\242 \100\264\260\172\120\020\120\164\304\310\275\060\017\006\003\125 \035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003 \125\035\017\001\001\377\004\004\003\002\001\006\060\015\006\011 \052\206\110\206\367\015\001\001\005\005\000\003\202\001\001\000 \211\127\262\026\172\250\302\375\326\331\233\233\064\302\234\264  $\label{eq:condition} $$ \062\024\115\247\244\337\354\276\247\276\370\103\333\221\067\316$$ \264\062\056\120\125\032\065\116\166\103\161\040\357\223\167\116  $\label{eq:condition} $$ \025\160\056\207\303\301\035\155\334\313\265\047\324\054\126\321 $$$ \122\123\072\104\322\163\310\304\033\005\145\132\142\222\234\356 \101\215\061\333\347\064\352\131\041\325\001\172\327\144\270\144  $\label{eq:condition} $$ \071\315\311\355\257\355\113\003\110\247\240\231\001\200\334\145$ \243\066\256\145\131\110\117\202\113\310\145\361\127\035\345\131 \056\012\077\154\330\321\365\345\011\264\154\124\000\012\340\025 \115\207\165\155\267\130\226\132\335\155\322\000\240\364\233\110 \276\303\067\244\272\066\340\174\207\205\227\032\025\242\336\056 \242\133\275\257\030\371\220\120\315\160\131\370\047\147\107\313 \307\240\007\072\175\321\054\135\154\031\072\146\265\175\375\221 \157\202\261\276\010\223\333\024\107\361\242\067\307\105\236\074 \307\167\257\144\250\223\337\366\151\203\202\140\362\111\102\064 \355\132\000\124\205\034\026\066\222\014\134\372\246\255\277\333

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

**END** 

<sup>#</sup> Trust for "AffirmTrust Networking"

<sup>#</sup> Issuer: CN=AffirmTrust Networking,O=AffirmTrust,C=US

<sup>#</sup> Serial Number:7c:4f:04:39:1c:d4:99:2d

<sup>#</sup> Subject: CN=AffirmTrust Networking,O=AffirmTrust,C=US

<sup>#</sup> Not Valid Before: Fri Jan 29 14:08:24 2010 # Not Valid After : Tue Dec 31 14:08:24 2030

```
0A:81:EC:5A:92:97:77:F1:45:90:4A:F3:8D:5D:50:9F:66:B5:E2:C5:8F:CD:B5:31:05:8B:0E:17:F3:F0:B4:1B
# Fingerprint (SHA1): 29:36:21:02:8B:20:ED:02:F5:66:C5:32:D1:D6:ED:90:9F:45:00:2F
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "AffirmTrust Networking"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\051\066\041\002\213\040\355\002\365\146\305\062\321\326\355\220
\237\105\000\057
END
CKA CERT MD5 HASH MULTILINE OCTAL
\102\145\312\276\001\232\232\114\251\214\101\111\315\300\325\177
END
CKA ISSUER MULTILINE OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\157\162\153\151\156\147
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\174\117\004\071\034\324\231\055
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "AffirmTrust Premium"
# Issuer: CN=AffirmTrust Premium,O=AffirmTrust,C=US
# Serial Number:6d:8c:14:46:b1:a6:0a:ee
# Subject: CN=AffirmTrust Premium,O=AffirmTrust,C=US
# Not Valid Before: Fri Jan 29 14:10:36 2010
# Not Valid After: Mon Dec 31 14:10:36 2040
# Fingerprint (SHA-256):
70:A7:3F:7F:37:6B:60:07:42:48:90:45:34:B1:14:82:D5:BF:0E:69:8E:CC:49:8D:F5:25:77:EB:F2:E9:3B:9A
# Fingerprint (SHA1): D8:A6:33:2C:E0:03:6F:B1:85:F6:63:4F:7D:6A:06:65:26:32:28:27
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AffirmTrust Premium"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

# Fingerprint (SHA-256):

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

\060\101\061\013\060\011\006\003\125\004\006\023\002\125\123\061 \024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155 \124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023 \101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155 \151\165\155

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\155\214\024\106\261\246\012\356

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\106\060\202\003\056\240\003\002\001\002\002\010\155 \214\024\106\261\246\012\356\060\015\006\011\052\206\110\206\367 \015\001\001\001\014\005\000\060\101\061\013\060\011\006\003\125\004 \006\023\002\125\123\061\024\060\022\006\003\125\004\012\014\013  $\label{eq:condition} $$ 101\146\146\151\162\155\124\162\165\163\164\061\034\060\032\006$$ \003\125\004\003\014\023\101\146\146\151\162\155\124\162\165\163 \164\040\120\162\145\155\151\165\155\060\036\027\015\061\060\060 \061\062\071\061\064\061\060\063\066\132\027\015\064\060\061\062 \063\061\061\064\061\060\063\066\132\060\101\061\013\060\011\006  $\\003\\125\\004\\006\\023\\002\\125\\123\\061\\024\\060\\022\\006\\003\\125\\004$ \012\014\013\101\146\146\151\162\155\124\162\165\163\164\061\034 \060\032\006\003\125\004\003\014\023\101\146\146\151\162\155\124 \162\165\163\164\040\120\162\145\155\151\165\155\060\202\002\042 \060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003 \202\002\017\000\060\202\002\012\002\202\002\001\000\304\022\337 \251\137\376\101\335\335\365\237\212\343\366\254\341\074\170\232 \274\330\360\177\172\240\063\052\334\215\040\133\256\055\157\347 \223\331\066\160\152\150\317\216\121\243\205\133\147\004\240\020 \044\157\135\050\202\301\227\127\330\110\051\023\266\341\276\221 \115\337\205\014\123\030\232\036\044\242\117\217\360\242\205\013 \313\364\051\177\322\244\130\356\046\115\311\252\250\173\232\331 \372\070\336\104\127\025\345\370\214\310\331\110\342\015\026\047 \035\036\310\203\205\045\267\272\252\125\101\314\003\042\113\055 \221\215\213\346\211\257\146\307\351\377\053\351\074\254\332\322 \263\303\341\150\234\211\370\172\000\126\336\364\125\225\154\373 \272\144\335\142\213\337\013\167\062\353\142\314\046\232\233\273 \252\142\203\114\264\006\172\060\310\051\277\355\006\115\227\271 \034\304\061\053\325\137\274\123\022\027\234\231\127\051\146\167 \141\041\061\007\056\045\111\235\030\362\356\363\053\161\214\265 \272\071\007\111\167\374\357\056\222\220\005\215\055\057\167\173

\357\103\277\065\273\232\330\371\163\247\054\362\320\127\356\050 \116\046\137\217\220\150\011\057\270\370\334\006\351\056\232\076 \121\247\321\042\304\012\247\070\110\154\263\371\377\175\253\206 \127\343\272\326\205\170\167\272\103\352\110\177\366\330\276\043 \155\036\277\321\066\154\130\134\361\356\244\031\124\032\365\003 \322\166\346\341\214\275\074\263\323\110\113\342\310\370\177\222 \250\166\106\234\102\145\076\244\036\301\007\003\132\106\055\270  $\label{eq:condition} $$ \227\363\267\325\262\125\041\357\272\334\114\000\227\373\024\225$  $\\ \\ \langle 047 \rangle 063 \rangle 277 \rangle 350 \rangle 103 \rangle 107 \rangle 106 \rangle 322 \rangle 010 \rangle 231 \rangle 026 \rangle 140 \rangle 073 \rangle 232 \rangle 176 \rangle 322 \rangle 176 \rangle 176$ \346\355\070\352\354\001\036\074\110\126\111\011\307\114\067\000  $\label{eq:condition} $$ \236\210\016\300\163\341\157\146\351\162\107\060\076\020\345\013$  $\label{eq:condition} $$ \003\311\232\102\000\154\305\224\176\141\304\212\337\177\202\032$ \013\131\304\131\062\167\263\274\140\151\126\071\375\264\006\173  $\label{eq:condition} $$ \054\326\144\066\331\275\110\355\204\037\176\245\042\217\052\270$$ \102\364\202\267\324\123\220\170\116\055\032\375\201\157\104\327 \073\001\164\226\102\340\000\342\056\153\352\305\356\162\254\273 \277\376\352\252\250\370\334\366\262\171\212\266\147\002\003\001 \000\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004 \024\235\300\147\246\014\042\331\046\365\105\253\246\145\122\021  $\\ \langle 047 \rangle 330 \rangle 105 \rangle 254 \rangle 143 \rangle 060 \rangle 017 \rangle 006 \rangle 003 \rangle 125 \rangle 035 \rangle 023 \rangle 001 \rangle 001 \rangle 377 \rangle 004$ \005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377 \004\004\003\002\001\006\060\015\006\011\052\206\110\206\367\015  $\label{eq:condition} $$ \001\014\005\000\003\202\002\001\000\263\127\115\020\142\116 $$$ \072\344\254\352\270\034\257\062\043\310\263\111\132\121\234\166 \050\215\171\252\127\106\027\325\365\122\366\267\104\350\010\104 \277\030\204\322\013\200\315\305\022\375\000\125\005\141\207\101 \334\265\044\236\074\304\330\310\373\160\236\057\170\226\203\040  $\label{eq:condition} $$ \066\336\174\017\151\023\210\245\165\066\230\010\246\306\337\254$$$ \316\343\130\326\267\076\336\272\363\353\064\100\330\242\201\365 \170\077\057\325\245\374\331\242\324\136\004\016\027\255\376\101  $\label{eq:condition} $$ 360\345\262\162\372\104\202\063\102\350\055\130\367\126\214\142 $$$ \077\272\102\260\234\014\134\176\056\145\046\134\123\117\000\262 \170\176\241\015\231\055\215\270\035\216\242\304\260\375\140\320 \060\244\216\310\004\142\251\304\355\065\336\172\227\355\016\070 \136\222\057\223\160\245\251\234\157\247\175\023\035\176\306\010 \110\261\136\147\353\121\010\045\351\346\045\153\122\051\221\234 \322\071\163\010\127\336\231\006\264\133\235\020\006\341\302\000  $\verb|250|270|034|112|002|012|024|320|301|101|312|373|214|065|041|175|$  $\label{eq:condition} $$ \202\070\362\251\124\221\031\065\223\224\155\152\072\305\262\320 $$$ \273\211\206\223\350\233\311\017\072\247\172\270\241\360\170\106 \372\374\067\057\345\212\204\363\337\376\004\331\241\150\240\057 \044\342\011\225\006\325\225\312\341\044\226\353\174\366\223\005 \273\355\163\351\055\321\165\071\327\347\044\333\330\116\137\103 \217\236\320\024\071\277\125\160\110\231\127\061\264\234\356\112 \230\003\226\060\037\140\006\356\033\043\376\201\140\043\032\107 \142\205\245\314\031\064\200\157\263\254\032\343\237\360\173\110 \255\325\001\331\147\266\251\162\223\352\055\146\265\262\270\344 \075\074\262\357\114\214\352\353\007\277\253\065\232\125\206\274

 $\label{eq:condition} $$ \030\246\265\250\136\264\203\154\153\151\100\323\237\334\361\303\151\153\271\341\155\011\364\361\252\120\166\012\172\175\172\027\241\125\226\102\231\061\011\335\140\021\215\005\060\176\346\216\106\321\235\024\332\307\027\344\005\226\214\304\044\265\033\317\024\007\262\100\370\243\236\101\206\274\004\320\153\226\310\052\200\064\375\277\357\006\243\335\130\305\205\075\076\217\376\236\051\340\266\270\011\150\031\034\030\103$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "AffirmTrust Premium"
- # Issuer: CN=AffirmTrust Premium,O=AffirmTrust,C=US
- # Serial Number:6d:8c:14:46:b1:a6:0a:ee
- # Subject: CN=AffirmTrust Premium,O=AffirmTrust,C=US
- # Not Valid Before: Fri Jan 29 14:10:36 2010 # Not Valid After : Mon Dec 31 14:10:36 2040
- # Fingerprint (SHA-256):

70:A7:3F:7F:37:6B:60:07:42:48:90:45:34:B1:14:82:D5:BF:0E:69:8E:CC:49:8D:F5:25:77:EB:F2:E9:3B:9A

# Fingerprint (SHA1): D8:A6:33:2C:E0:03:6F:B1:85:F6:63:4F:7D:6A:06:65:26:32:28:27

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "AffirmTrust Premium"

CKA CERT SHA1 HASH MULTILINE OCTAL

 $\label{eq:condition} $$ 330 246 063 054 340 003 157 261 205 366 143 117 175 152 006 145$ 

\046\062\050\047

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\304\135\016\110\266\254\050\060\116\012\274\371\070\026\207\127

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\124\162\165\163\164\061\034\060\032\006\003\125\004\003\014\023

\151\165\155

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\010\155\214\024\106\261\246\012\356$$ 

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

 ${\tt CKA\_TRUST\_STEP\_UP\_APPROVED\ CK\_BBOOL\ CK\_FALSE}$ 

# Certificate "AffirmTrust Premium ECC"

#

# Issuer: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US

# Serial Number:74:97:25:8a:c7:3f:7a:54

# Subject: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US

# Not Valid Before: Fri Jan 29 14:20:24 2010 # Not Valid After : Mon Dec 31 14:20:24 2040

# Fingerprint (SHA-256):

BD:71:FD:F6:DA:97:E4:CF:62:D1:64:7A:DD:25:81:B0:7D:79:AD:F8:39:7E:B4:EC:BA:9C:5E:84:88:82:14:23

# Fingerprint (SHA1): B8:23:6B:00:2F:1D:16:86:53:01:55:6C:11:A4:37:CA:EB:FF:C3:BB

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AffirmTrust Premium ECC"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$ 

\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027

\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155

\151\165\155\040\105\103\103

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027

\101\146\146\151\162\155\124\162\165\163\164\040\120\162\145\155

\151\165\155\040\105\103\103

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\164\227\045\212\307\077\172\124

**END** 

#### CKA VALUE MULTILINE OCTAL

\124\162\165\163\164\040\120\162\145\155\151\165\155\040\105\103 \103\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005  $\label{eq:condition} $$ \053\201\004\000\042\003\142\000\004\015\060\136\033\025\235\003$  $\label{eq:condition} $$ 320\241\171\065\267\072\074\222\172\312\025\034\315\142\363\234$$ \046\134\007\075\345\124\372\243\326\314\022\352\364\024\137\350 \216\031\253\057\056\110\346\254\030\103\170\254\320\067\303\275 \262\315\054\346\107\342\032\346\143\270\075\056\057\170\304\117 \333\364\017\244\150\114\125\162\153\225\035\116\030\102\225\170 \314\067\074\221\342\233\145\053\051\243\102\060\100\060\035\006 \003\125\035\016\004\026\004\024\232\257\051\172\300\021\065\065 \046\121\060\000\303\152\376\100\325\256\326\074\060\017\006\003 \125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006 \003\125\035\017\001\001\377\004\004\003\002\001\006\060\012\006 \010\052\206\110\316\075\004\003\003\003\147\000\060\144\002\060  $\label{eq:condition} $$ \027\011\363\207\210\120\132\257\310\300\102\277\107\137\365\154$$ \152\206\340\304\047\164\344\070\123\327\005\177\033\064\343\306 \057\263\312\011\074\067\235\327\347\270\106\361\375\241\342\161 \002\060\102\131\207\103\324\121\337\272\323\011\062\132\316\210 \176\127\075\234\137\102\153\365\007\055\265\360\202\223\371\131 \157\256\144\372\130\345\213\036\343\143\276\265\201\315\157\002 \214\171

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "AffirmTrust Premium ECC"
```

# Issuer: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US

# Serial Number:74:97:25:8a:c7:3f:7a:54

# Subject: CN=AffirmTrust Premium ECC,O=AffirmTrust,C=US

# Not Valid Before: Fri Jan 29 14:20:24 2010

# Not Valid After: Mon Dec 31 14:20:24 2040

# Fingerprint (SHA-256):

BD:71:FD:F6:DA:97:E4:CF:62:D1:64:7A:DD:25:81:B0:7D:79:AD:F8:39:7E:B4:EC:BA:9C:5E:84:88:82:14:23

# Fingerprint (SHA1): B8:23:6B:00:2F:1D:16:86:53:01:55:6C:11:A4:37:CA:EB:FF:C3:BB

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AffirmTrust Premium ECC"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$\270\043\153\000\057\035\026\206\123\001\125\154\021\244\067\312\353\377\303\273$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\144\260\011\125\317\261\325\231\342\276\023\253\246\135\352\115

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\105\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\024\060\022\006\003\125\004\012\014\013\101\146\146\151\162\155
\124\162\165\163\164\061\040\060\036\006\003\125\004\003\014\027
\151\165\155\040\105\103\103
END
CKA SERIAL NUMBER MULTILINE OCTAL
\label{eq:condition} $$ \002\010\164\227\045\212\307\077\172\124 $$
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
#
# Certificate "Certum Trusted Network CA"
# Issuer: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies
S.A..C=PL
# Serial Number: 279744 (0x444c0)
# Subject: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies
S.A..C=PL
# Not Valid Before: Wed Oct 22 12:07:37 2008
# Not Valid After: Mon Dec 31 12:07:37 2029
# Fingerprint (SHA-256):
5C:58:46:8D:55:F5:8E:49:7E:74:39:82:D2:B5:00:10:B6:D1:65:37:4A:CF:83:A7:D4:A3:2D:B7:68:C4:40:8E
# Fingerprint (SHA1): 07:E0:32:E0:20:B7:2C:3F:19:2F:06:28:A2:59:3A:19:A7:0F:06:9E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Certum Trusted Network CA"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\label{eq:condition} $$ \060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061 $$
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\label{eq:condition} $$ \frac{157}040\\124\\145\\143\\150\\156\\157\\154\\157\\147\\151\\145\\163\\040\\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162
\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
```

 $\label{lem:condition} $$ \056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103\101\ END$ 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\004\104\300

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\003\273\060\202\002\243\240\003\002\001\002\002\003\004$ \104\300\060\015\006\011\052\206\110\206\367\015\001\001\005\005 \000\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114  $\label{eq:condition} $$ 164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040$$ \123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103 \145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164 \151\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060 \040\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124 \101\060\036\027\015\060\070\061\060\062\062\061\062\060\067\063 \067\132\027\015\062\071\061\062\063\061\061\062\060\067\063\067  $\label{eq:condition} $$ 132\060\176\061\013\060\011\006\003\125\004\006\023\002\120\114$$ \061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145 \164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040 \123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103 \145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164  $\label{eq:condition} $$ \frac{151}{157}\frac{6}{040}\frac{101}{165}\frac{164}{150}\frac{157}{162}\frac{151}{164}\frac{171}{061}\frac{042}{060} $$$ \040\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124 \162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103  $\label{eq:condition} $$ 101\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001 $$$ \001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001 \001\000\343\373\175\243\162\272\302\360\311\024\207\365\153\001 \116\341\156\100\007\272\155\047\135\177\367\133\055\263\132\307 \121\137\253\244\062\246\141\207\266\156\017\206\322\060\002\227 \370\327\151\127\241\030\071\135\152\144\171\306\001\131\254\074 \061\112\070\174\322\004\322\113\050\350\040\137\073\007\242\314 \115\163\333\363\256\117\307\126\325\132\247\226\211\372\363\253 \150\324\043\206\131\047\317\011\047\274\254\156\162\203\034\060 \162\337\340\242\351\322\341\164\165\031\275\052\236\173\025\124 \004\033\327\103\071\255\125\050\305\342\032\273\364\300\344\256 \070\111\063\314\166\205\237\071\105\322\244\236\362\022\214\121 \370\174\344\055\177\365\254\137\353\026\237\261\055\321\272\314 \221\102\167\114\045\311\220\070\157\333\360\314\373\216\036\227  $\label{eq:condition} $$ \frac{325}140\\116\\346\\005\\050\\355\\111\\171\\023\\113\\272\\110\\333$ \057\371\162\323\071\312\376\037\330\064\162\365\264\100\317\061 \001\303\354\336\021\055\027\135\037\270\120\321\136\031\247\151 \336\007\063\050\312\120\225\371\247\124\313\124\206\120\105\251

\371\111\002\003\001\000\001\243\102\060\100\060\017\006\003\125 \035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003 \125\035\016\004\026\004\024\010\166\315\313\007\377\044\366\305  $\label{eq:condition} $$ \frac{315}{355} \frac{273}{220} \frac{274}{342} \frac{067}{106} \frac{165}{367} \frac{060}{016} \frac{006}{003} \frac{125}{125}$  $\label{eq:condition} $$ \035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052$$ \206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\246 \250\255\042\316\001\075\246\243\377\142\320\110\235\213\136\162 \260\170\104\343\334\034\257\011\375\043\110\372\275\052\304\271 \125\004\265\020\243\215\047\336\013\202\143\320\356\336\014\067 \171\101\133\042\262\260\232\101\134\246\160\340\324\320\167\313 \043\323\000\340\154\126\057\341\151\015\015\331\252\277\041\201 \120\331\006\245\250\377\225\067\320\252\376\342\263\365\231\055 \105\204\212\345\102\011\327\164\002\057\367\211\330\231\351\274  $\\ \\ 047\\324\\107\\215\\272\\015\\106\\034\\167\\317\\024\\244\\034\\271\\244\\061$  $\label{eq:condition} $$ 304\234\050\164\003\064\377\063\031\046\245\351\015\164\267\076$ \227\306\166\350\047\226\243\146\335\341\256\362\101\133\312\230  $\label{eq:condition} $$ \frac{203}{163}\frac{344}{206}\frac{32}{322}\frac{101}{272}\frac{75}{276}\frac{35}{023}\frac{132}{132} $$$ \166\157\116\350\116\201\016\077\133\003\042\240\022\276\146\130  $\label{eq:condition} $$ \021\12\313\003\304\264\052\052\055\226\027\340\071\124\274\110 $$$ \323\166\047\235\232\055\006\246\311\354\071\322\253\333\237\232 \013\047\002\065\051\261\100\225\347\371\350\234\125\210\031\106 \326\267\064\365\176\316\071\232\331\070\361\121\367\117\054 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Certum Trusted Network CA"
- # Issuer: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL
- # Serial Number: 279744 (0x444c0)
- # Subject: CN=Certum Trusted Network CA,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL
- # Not Valid Before: Wed Oct 22 12:07:37 2008
- # Not Valid After: Mon Dec 31 12:07:37 2029
- # Fingerprint (SHA-256):
- 5C:58:46:8D:55:F5:8E:49:7E:74:39:82:D2:B5:00:10:B6:D1:65:37:4A:CF:83:A7:D4:A3:2D:B7:68:C4:40:8E
- # Fingerprint (SHA1): 07:E0:32:E0:20:B7:2C:3F:19:2F:06:28:A2:59:3A:19:A7:0F:06:9E
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "Certum Trusted Network CA"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL
- $\label{eq:condition} $$ \007\340\062\340\040\267\054\077\031\057\006\050\242\131\072\031\$
- \247\017\006\236
- **END**
- CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\325\351\201\100\305\030\151\374\106\054\211\165\142\017\252\170
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\176\061\013\060\011\006\003\125\004\006\023\002\120\114\061 $$
\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145\164
\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040\123
\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145
\157\156\040\101\165\164\150\157\162\151\164\171\061\042\060\040
\006\003\125\004\003\023\031\103\145\162\164\165\155\040\124\162
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\003\004\104\300
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "TWCA Root Certification Authority"
# Issuer: CN=TWCA Root Certification Authority, OU=Root CA, O=TAIWAN-CA, C=TW
# Serial Number: 1 (0x1)
# Subject: CN=TWCA Root Certification Authority, OU=Root CA,O=TAIWAN-CA,C=TW
# Not Valid Before: Thu Aug 28 07:24:33 2008
# Not Valid After: Tue Dec 31 15:59:59 2030
# Fingerprint (SHA-256):
BF:D8:8F:E1:10:1C:41:AE:3E:80:1B:F8:BE:56:35:0E:E9:BA:D1:A6:B9:BD:51:5E:DC:5C:6D:5B:87:11:AC:44
# Fingerprint (SHA1): CF:9E:87:6D:D3:EB:FC:42:26:97:A3:B5:A3:7A:A0:76:A9:06:23:48
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "TWCA Root Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061 $$
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041
\124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146
\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164
\171
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
```

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\173\060\202\002\143\240\003\002\001\002\002\001\001  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\005\005\000\060 $$$ \137\061\013\060\011\006\003\125\004\006\023\002\124\127\061\022 \060\020\006\003\125\004\012\014\011\124\101\111\127\101\116\055 \164\040\103\101\061\052\060\050\006\003\125\004\003\014\041\124 \127\103\101\040\122\157\157\164\040\103\145\162\164\151\146\151  $\\ 143 \\ 141 \\ 164 \\ 151 \\ 157 \\ 156 \\ 040 \\ 101 \\ 165 \\ 164 \\ 150 \\ 157 \\ 162 \\ 151 \\ 164 \\ 171 \\$ \060\036\027\015\060\070\060\070\062\070\060\067\062\064\063\063 \132\027\015\063\060\061\062\063\061\061\065\065\071\065\071\132  $\label{eq:condition} $$ \060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061 $$$ \022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116 \055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157 \157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041 \124\127\103\101\040\122\157\157\164\040\103\145\162\164\151\146 \171\060\202\001\042\060\015\006\011\052\206\110\206\367\015\001 \001\001\005\000\003\202\001\017\000\060\202\001\012\002\202\001  $\label{eq:condition} $$ \001\000\260\176\162\270\244\003\224\346\247\336\011\070\221\112 $$$ \021\100\207\247\174\131\144\024\173\265\021\020\335\376\277\325 \300\273\126\342\205\045\364\065\162\017\370\123\320\101\341\104 \001\302\264\034\303\061\102\026\107\205\063\042\166\262\012\157 \017\345\045\120\117\205\206\276\277\230\056\020\147\036\276\021 \005\206\005\220\304\131\320\174\170\020\260\200\134\267\341\307 \053\165\313\174\237\256\265\321\235\043\067\143\247\334\102\242 \055\222\004\033\120\301\173\270\076\033\311\126\004\213\057\122 \233\255\251\126\351\301\377\255\251\130\207\060\266\201\367\227 \105\374\031\127\073\053\157\344\107\364\231\105\376\035\361\370 \227\243\210\035\067\034\134\217\340\166\045\232\120\370\240\124 \377\104\220\166\043\322\062\306\303\253\006\277\374\373\277\363 \255\175\222\142\002\133\051\323\065\243\223\232\103\144\140\135 \262\372\062\377\073\004\257\115\100\152\371\307\343\357\043\375  $\label{eq:condition} $$ \frac{313}{345}\frac{316}{017}\frac{315}{070}\frac{356}{012}\frac{374}{376}\frac{017}{230}\frac{237}{060}\frac{61}{061} $$$ \335\154\122\145\371\213\201\276\042\341\034\130\003\272\221\033 \211\007\002\003\001\000\001\243\102\060\100\060\016\006\003\125 

\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003 \125\035\016\004\026\004\024\152\070\133\046\215\336\213\132\362 \117\172\124\203\031\030\343\010\065\246\272\060\015\006\011\052 \206\110\206\367\015\001\001\005\005\000\003\202\001\001\000\074  $\label{eq:condition} $$ \frac{325}{167}075\\ 332\\ 337\\ 211\\ 272\\ 207\\ 014\\ 010\\ 124\\ 152\\ 040\\ 120\\ 222\\ 276$ \260\101\075\271\046\144\203\012\057\350\100\300\227\050\047\202 \060\112\311\223\377\152\347\246\000\177\211\102\232\326\021\345 \123\316\057\314\362\332\005\304\376\342\120\304\072\206\175\314 \332\176\020\011\073\222\065\052\123\262\376\353\053\005\331\154 \135\346\320\357\323\152\146\236\025\050\205\172\350\202\000\254  $\label{eq:condition} $$ \036\247\011\151\126\102\323\150\121\030\276\124\232\277\104\101$ \272\111\276\040\272\151\134\356\270\167\315\316\154\037\255\203 \226\030\175\016\265\024\071\204\361\050\351\055\243\236\173\036 \172\162\132\203\263\171\157\357\264\374\320\012\245\130\117\106 \337\373\155\171\131\362\204\042\122\256\017\314\373\174\073\347 \152\312\107\141\303\172\370\323\222\004\037\270\040\204\341\066  $\label{eq:condition} $$ \frac{124}026\\307\\100\\336\\073\\212\\163\\334\\337\\306\\011\\114\\337\\354\\332$ \377\324\123\102\241\311\362\142\035\042\203\074\227\305\371\031 \142\047\254\145\042\327\323\074\306\345\216\262\123\314\111\316 \274\060\376\173\016\063\220\373\355\322\024\221\037\007\257 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "TWCA Root Certification Authority"
- # Issuer: CN=TWCA Root Certification Authority,OU=Root CA,O=TAIWAN-CA,C=TW
- # Serial Number: 1 (0x1)
- # Subject: CN=TWCA Root Certification Authority, OU=Root CA,O=TAIWAN-CA,C=TW
- # Not Valid Before: Thu Aug 28 07:24:33 2008
- # Not Valid After: Tue Dec 31 15:59:59 2030
- # Fingerprint (SHA-256):

BF:D8:8F:E1:10:1C:41:AE:3E:80:1B:F8:BE:56:35:0E:E9:BA:D1:A6:B9:BD:51:5E:DC:5C:6D:5B:87:11:AC:44

# Fingerprint (SHA1): CF:9E:87:6D:D3:EB:FC:42:26:97:A3:B5:A3:7A:A0:76:A9:06:23:48

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TWCA Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\317\236\207\155\323\353\374\102\046\227\243\265\243\172\240\166

 $\verb| 251| 006| 043| 110$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\252\010\217\366\371\173\267\362\261\247\036\233\352\352\275\171

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\137\061\013\060\011\006\003\125\004\006\023\002\124\127\061

```
\022\060\020\006\003\125\004\012\014\011\124\101\111\127\101\116
\055\103\101\061\020\060\016\006\003\125\004\013\014\007\122\157
\157\164\040\103\101\061\052\060\050\006\003\125\004\003\014\041
\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Explicitly Distrust DigiNotar Root CA"
# Issuer: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL
# Serial Number:0f:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff
# Subject: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL
# Not Valid Before: Fri Jul 27 17:19:37 2007
# Not Valid After: Mon Mar 31 18:19:22 2025
# Fingerprint (MD5): 0A:A4:D5:CC:BA:B4:FB:A3:59:E3:E6:01:DD:53:D9:4E
# Fingerprint (SHA1): C1:77:CB:4B:E0:B4:26:8E:F5:C7:CF:45:99:22:B9:B0:CE:BA:21:2F
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Explicitly Distrust DigiNotar Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA SUBJECT MULTILINE OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\label{eq:condition} $$ 164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151 $$
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
\label{eq:linear_line
\154
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\040\060\036\006\011\052\206\110\206\367\015\001\011\001\026\021
```

\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156

\154

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

**END** 

### CKA VALUE MULTILINE OCTAL

\060\202\005\212\060\202\003\162\240\003\002\001\002\002\002\017 \015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\137 \061\013\060\011\006\003\125\004\006\023\002\116\114\061\022\060  $\label{eq:condition} $$ \000\003\125\004\012\023\011\104\151\147\151\116\157\164\141 $$$ \162\061\032\060\030\006\003\125\004\003\023\021\104\151\147\151  $\label{eq:condition} $$ \036\006\011\052\206\110\206\367\015\001\011\001\026\021\151\156$ \146\157\100\144\151\147\151\156\157\164\141\162\056\156\154\060  $\label{eq:condition} $$ \060\067\060\067\062\067\061\067\061\071\063\067\132 $$$ \027\015\062\065\060\063\063\061\061\070\061\071\062\062\132\060 \137\061\013\060\011\006\003\125\004\006\023\002\116\114\061\022  $\label{eq:condition} $$ \000\000\000\12\004\012\023\011\104\151\147\151\116\157\164$$$ \141\162\061\032\060\030\006\003\125\004\003\023\021\104\151\147 \151\116\157\164\141\162\040\122\157\157\164\040\103\101\061\040  $\label{eq:condition} $$ \006\006\011\052\206\110\206\367\015\001\011\001\026\021\151$ \156\146\157\100\144\151\147\151\156\157\164\141\162\056\156\154 \060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001 \001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001 \000\254\260\130\301\000\275\330\041\010\013\053\232\376\156\126  $\label{eq:condition} $$ \060\005\237\033\167\220\020\101\134\303\015\207\021\167\216\201 $$$ \361\312\174\351\214\152\355\070\164\065\273\332\337\371\273\300 \011\067\264\226\163\201\175\063\032\230\071\367\223\157\225\177  $\label{eq:condition} $$ \075\271\261\165\207\272\121\110\350\213\160\076\225\004\305\330 $$$ \266\303\026\331\210\260\261\207\035\160\332\206\264\017\024\213 \172\317\020\321\164\066\242\022\173\167\206\112\171\346\173\337 \002\021\150\245\116\206\256\064\130\233\044\023\170\126\042\045 \036\001\213\113\121\161\373\202\314\131\226\151\210\132\150\123 \305\271\015\002\067\313\113\274\146\112\220\176\052\013\005\007 \355\026\137\125\220\165\330\106\311\033\203\342\010\276\361\043  $\label{eq:condition} $$ \frac{314 \times 31 \times 326 \times 326 \times 320 \times 342 \times 342$  $\label{eq:condition} $$ 302\111\261\271\001\201\152\235\155\235\100\167\150\166\116\041 $$$ \052\155\204\100\205\116\166\231\174\202\363\363\267\002\131\324 \046\001\033\216\337\255\123\006\321\256\030\335\342\262\072\313 \327\210\070\216\254\133\051\271\031\323\230\371\030\003\317\110 \202\206\146\013\033\151\017\311\353\070\210\172\046\032\005\114 \222\327\044\324\226\362\254\122\055\243\107\325\122\366\077\376 \316\204\006\160\246\252\076\242\362\266\126\064\030\127\242\344 \201\155\347\312\360\152\323\307\221\153\002\203\101\174\025\357 \153\232\144\136\343\320\074\345\261\353\173\135\206\373\313\346 \167\111\315\243\145\334\367\271\234\270\344\013\137\223\317\314

\060\032\062\034\316\034\143\225\245\371\352\341\164\213\236\351 \053\251\060\173\240\030\037\016\030\013\345\133\251\323\321\154 \036\007\147\217\221\113\251\212\274\322\146\252\223\001\210\262 \221\372\061\134\325\246\301\122\010\011\315\012\143\242\323\042 \246\350\241\331\071\006\227\365\156\215\002\220\214\024\173\077 \200\315\033\234\272\304\130\162\043\257\266\126\237\306\172\102 \063\051\007\077\202\311\346\037\005\015\315\114\050\066\213\323 \310\076\034\306\210\357\136\356\211\144\351\035\353\332\211\176  $\label{eq:condition} $$ \062\246\151\321\335\314\210\237\321\320\311\146\041\334\006\147 $$$ \305\224\172\232\155\142\114\175\314\340\144\200\262\236\107\216 \243\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035  $\label{eq:condition} $$ \023\001\001\377\004\005\060\003\001\001\377\060\016\006\003\125$$ \035\017\001\001\377\004\004\003\002\001\006\060\035\006\003\125  $\label{eq:condition} $$ \035\016\004\026\004\024\210\150\277\340\216\065\304\073\070\153$  $\\ 142\\367\\050\\073\\204\\201\\310\\014\\327\\115\\060\\015\\006\\011\\052\\206$ \110\206\367\015\001\001\005\005\000\003\202\002\001\000\073\002 \215\313\074\060\350\156\240\255\362\163\263\137\236\045\023\004 \005\323\366\343\213\273\013\171\316\123\336\344\226\305\321\257 \163\274\325\303\320\100\125\174\100\177\315\033\137\011\325\362 \174\237\150\035\273\135\316\172\071\302\214\326\230\173\305\203 \125\250\325\175\100\312\340\036\367\211\136\143\135\241\023\302 \135\212\266\212\174\000\363\043\303\355\205\137\161\166\360\150  $\label{eq:condition} $$ 143\252\105\041\071\110\141\170\066\334\361\103\223\324\045\307$ \362\200\145\341\123\002\165\121\374\172\072\357\067\253\204\050 \127\014\330\324\324\231\126\154\343\242\376\131\204\264\061\350 \063\370\144\224\224\121\227\253\071\305\113\355\332\335\200\013 \157\174\051\015\304\216\212\162\015\347\123\024\262\140\101\075 \204\221\061\150\075\047\104\333\345\336\364\372\143\105\310\114 \076\230\365\077\101\272\116\313\067\015\272\146\230\361\335\313 \237\134\367\124\066\202\153\054\274\023\141\227\102\370\170\273  $\label{eq:condition} $$ \frac{314}{310}\frac{242}{237}\frac{312}{360}\frac{275}{153}\frac{262}{337}\frac{215}{157}\frac{235}{157}$$$ \332\216\147\307\107\036\312\271\277\052\102\221\267\143\123\146 \361\102\243\341\364\132\115\130\153\265\344\244\063\255\134\160 \035\334\340\362\353\163\024\221\232\003\301\352\000\145\274\007 \374\317\022\021\042\054\256\240\275\072\340\242\052\330\131\351 \051\323\030\065\244\254\021\137\031\265\265\033\377\042\112\134 \306\172\344\027\357\040\251\247\364\077\255\212\247\232\004\045 \235\016\312\067\346\120\375\214\102\051\004\232\354\271\317\113 \162\275\342\010\066\257\043\057\142\345\312\001\323\160\333\174 \202\043\054\026\061\014\306\066\007\220\172\261\037\147\130\304 \073\130\131\211\260\214\214\120\263\330\206\313\150\243\304\012 \347\151\113\040\316\301\036\126\113\225\251\043\150\330\060\330 \303\353\260\125\121\315\345\375\053\270\365\273\021\237\123\124 \366\064\031\214\171\011\066\312\141\027\045\027\013\202\230\163  $\label{eq:condition} $$ \014\167\164\303\325\015\307\250\022\114\307\247\124\161\107\056$$ \054\032\175\311\343\053\073\110\336\047\204\247\143\066\263\175 \217\240\144\071\044\015\075\173\207\257\146\134\164\033\113\163 \262\345\214\360\206\231\270\345\305\337\204\301\267\353

```
# Trust for Certificate "Explicitly Distrust DigiNotar Root CA"
# Issuer: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL
# Serial Number:0f:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff:ff
# Subject: E=info@diginotar.nl,CN=DigiNotar Root CA,O=DigiNotar,C=NL
# Not Valid Before: Fri Jul 27 17:19:37 2007
# Not Valid After: Mon Mar 31 18:19:22 2025
# Fingerprint (MD5): 0A:A4:D5:CC:BA:B4:FB:A3:59:E3:E6:01:DD:53:D9:4E
# Fingerprint (SHA1): C1:77:CB:4B:E0:B4:26:8E:F5:C7:CF:45:99:22:B9:B0:CE:BA:21:2F
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Explicitly Distrust DigiNotar Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\301\167\313\113\340\264\046\216\365\307\317\105\231\042\271\260
\316\272\041\057
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\012\244\325\314\272\264\373\243\131\343\346\001\335\123\331\116
END
CKA_ISSUER MULTILINE_OCTAL
\060\137\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\022\060\020\006\003\125\004\012\023\011\104\151\147\151\116\157
\164\141\162\061\032\060\030\006\003\125\004\003\023\021\104\151
\147\151\116\157\164\141\162\040\122\157\157\164\040\103\101\061
\label{eq:condition} $$ \0.060\0.36\0.06\0.01\0.052\2.06\1.10\2.06\3.67\0.15\0.01\0.11\0.01\0.26\0.21$
\151\156\146\157\100\144\151\147\151\156\157\164\141\162\056\156
\154
END
CKA SERIAL NUMBER MULTILINE OCTAL
\377\377
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_NOT_TRUSTED
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_NOT_TRUSTED
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_NOT_TRUSTED
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Security Communication RootCA2"
# Issuer: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP
# Serial Number: 0 (0x0)
# Subject: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP
# Not Valid Before: Fri May 29 05:00:39 2009
# Not Valid After: Tue May 29 05:00:39 2029
```

# Fingerprint (SHA-256):

51:3B:2C:EC:B8:10:D4:CD:E5:DD:85:39:1A:DF:C6:C2:DD:60:D8:7B:B7:36:D2:B5:21:48:4A:A4:7A:0E:BE:F6

# Fingerprint (SHA1): 5F:3B:8C:F2:F8:10:B3:7D:78:B4:CE:EC:19:19:C3:73:34:B9:C7:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Security Communication RootCA2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \060\13\060\011\060\003\125\004\006\023\002\112\120\061 $$ \045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040 $$ \124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117 $$ \056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023 $$ \036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156 $$$ 

\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062

**END** 

CKA ID UTF8 "0"

#### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \060\13\060\011\060\003\125\004\006\023\002\112\120\061\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124\162\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062\ END$ 

CKA SERIAL NUMBER MULTILINE OCTAL

\002\001\000

END

## CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\003\167\060\202\002\137\240\003\002\001\0002\0001\000$ \060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060 \135\061\013\060\011\006\003\125\004\006\023\002\112\120\061\045 \060\043\006\003\125\004\012\023\034\123\105\103\117\115\040\124 \162\165\163\164\040\123\171\163\164\145\155\163\040\103\117\056 \054\114\124\104\056\061\047\060\045\006\003\125\004\013\023\036 \123\145\143\165\162\151\164\171\040\103\157\155\155\165\156\151 \143\141\164\151\157\156\040\122\157\157\164\103\101\062\060\036  $\label{eq:condition} $$ \027\015\060\071\060\065\062\071\060\065\060\060\063\071\132\027 $$$ \015\062\071\060\065\062\071\060\065\060\060\063\071\132\060\135 \061\013\060\011\006\003\125\004\006\023\002\112\120\061\045\060  $\\ \\043\\\\006\\\\003\\\\125\\\\004\\\\012\\\\023\\\\034\\\\123\\\\105\\\\103\\\\117\\\\115\\\\040\\\\124\\\\162$ \165\163\164\040\123\171\163\164\145\155\163\040\103\117\056\054 \114\124\104\056\061\047\060\045\006\003\125\004\013\023\036\123 \145\143\165\162\151\164\171\040\103\157\155\155\165\156\151\143 \141\164\151\157\156\040\122\157\157\164\103\101\062\060\202\001 \042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000 \003\202\001\017\000\060\202\001\012\002\202\001\001\000\320\025

\071\122\261\122\263\272\305\131\202\304\135\122\256\072\103\145 \200\113\307\362\226\274\333\066\227\326\246\144\214\250\136\360 \343\012\034\367\337\227\075\113\256\366\135\354\041\265\101\253 \315\271\176\166\237\276\371\076\066\064\240\073\301\366\061\021 \105\164\223\075\127\200\305\371\211\231\312\345\253\152\324\265  $\label{eq:condition} $$ \32 \101\220\020\301\326\326\102\211\302\277\364\070\022\225\114$$ \124\005\367\066\344\105\203\173\024\145\326\334\014\115\321\336  $\label{eq:condition} $$ \frac{176}{014}253\frac{304}{025}276\frac{072}{126}246\frac{32}{157}\frac{166}{151}\frac{22}{251} $$ \172\271\310\353\152\232\135\122\320\055\012\153\065\026\011\020 \204\320\152\312\072\006\000\067\107\344\176\127\117\077\213\353 \147\270\210\252\305\276\123\125\262\221\304\175\271\260\205\031  $\label{eq:condition} $$ \006\170\056\333\141\032\372\205\365\112\221\241\347\026\325\216 $$$ \242\071\337\224\270\160\037\050\077\213\374\100\136\143\203\074  $\label{eq:condition} $$ \203\052\032\231\153\317\336\131\152\073\374\157\026\327\037\375$  $\label{eq:condition} $$ \frac{112\020\353\116\202\026\072\254\047\014\123\361\255\325\044\260}{1250\255\325\044\260} $$$ \153\003\120\301\055\074\026\335\104\064\047\032\165\373\002\003  $\label{eq:condition} $$ \001\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026 $$$ \004\024\012\205\251\167\145\005\230\174\100\201\370\017\227\054 \070\361\012\354\074\317\060\016\006\003\125\035\017\001\001\377  $\label{eq:condition} $$ \004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377 $$$ \004\005\060\003\001\001\377\060\015\006\011\052\206\110\206\367 \015\001\001\001\013\005\000\003\202\001\001\000\114\072\243\104\254 \271\105\261\307\223\176\310\013\012\102\337\144\352\034\356\131 \154\010\272\211\137\152\312\112\225\236\172\217\007\305\332\105 \162\202\161\016\072\322\314\157\247\264\241\043\273\366\044\237 \313\027\376\214\246\316\302\322\333\314\215\374\161\374\003\051 \301\154\135\063\137\144\266\145\073\211\157\030\166\170\365\334 \242\110\037\031\077\216\223\353\361\372\027\356\315\116\343\004 \022\125\326\345\344\335\373\076\005\174\342\035\136\306\247\274 \227\117\150\072\365\351\056\012\103\266\257\127\134\142\150\174 \267\375\243\212\204\240\254\142\276\053\011\207\064\360\152\001 \273\233\051\126\074\376\000\067\317\043\154\361\116\252\266\164 \106\022\154\221\356\064\325\354\232\221\347\104\276\220\061\162 \325\111\002\366\002\345\364\037\353\174\331\226\125\251\377\354 \212\371\231\107\377\065\132\002\252\004\313\212\133\207\161\051 \221\275\244\264\172\015\275\232\365\127\043\000\007\041\027\077 \112\071\321\005\111\013\247\266\067\201\245\135\214\252\063\136 \201\050\174\247\175\047\353\000\256\215\067

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Security Communication RootCA2"

<sup>#</sup> Issuer: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP

<sup>#</sup> Serial Number: 0 (0x0)

<sup>#</sup> Subject: OU=Security Communication RootCA2,O="SECOM Trust Systems CO.,LTD.",C=JP

<sup>#</sup> Not Valid Before: Fri May 29 05:00:39 2009

```
# Fingerprint (SHA-256):
51:3B:2C:EC:B8:10:D4:CD:E5:DD:85:39:1A:DF:C6:C2:DD:60:D8:7B:B7:36:D2:B5:21:48:4A:A4:7A:0E:BE:F6
# Fingerprint (SHA1): 5F:3B:8C:F2:F8:10:B3:7D:78:B4:CE:EC:19:19:C3:73:34:B9:C7:74
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Security Communication RootCA2"
CKA CERT SHA1 HASH MULTILINE OCTAL
\137\073\214\362\370\020\263\175\170\264\316\354\031\031\303\163
064271307164
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\label{eq:condition} $$ \frac{154\071\175\244\016\125\131\262\077\326\101\261\022\120\336\103}{103}$$
END
CKA_ISSUER MULTILINE_OCTAL
\060\135\061\013\060\011\006\003\125\004\006\023\002\112\120\061
\045\060\043\006\003\125\004\012\023\034\123\105\103\117\115\040
\056\054\114\124\104\056\061\047\060\045\006\003\125\004\013\023
\036\123\145\143\165\162\151\164\171\040\103\157\155\155\165\156
\151\143\141\164\151\157\156\040\122\157\157\164\103\101\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "EC-ACC"
# Issuer: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu https://www.catcert.net/verarrel
(c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES
# Serial Number:ee:2b:3d:eb:d4:21:de:14:a8:62:ac:04:f3:dd:c4:01
# Subject: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu
https://www.catcert.net/verarrel (c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF
Q-0801176-I),C=ES
# Not Valid Before: Tue Jan 07 23:00:00 2003
# Not Valid After: Tue Jan 07 22:59:59 2031
# Fingerprint (SHA-256):
88:49:7F:01:60:2F:31:54:24:6A:E2:8C:4D:5A:EF:10:F1:D8:7E:BB:76:62:6F:4A:E0:B7:F9:5B:A7:96:87:99
# Fingerprint (SHA1): 28:90:3A:63:5B:52:80:FA:E6:77:4C:0B:6D:A7:D6:BA:A6:4A:F2:E8
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
```

# Not Valid After: Tue May 29 05:00:39 2029

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA LABEL UTF8 "EC-ACC"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA SUBJECT MULTILINE OCTAL

\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123 \061\073\060\071\006\003\125\004\012\023\062\101\147\145\156\143 \151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103 \145\162\164\151\146\151\143\141\143\151\157\040\050\116\111\106 \040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060  $\\ \\046\\ \\006\\ \\003\\ \\125\\ \\004\\ \\013\\ \\023\\ \\037\\ \\123\\ \\145\\ \\162\\ \\166\\ \\145\\ \\151\\ \\163\\ \\040$  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013  $\label{eq:condition} $$ \023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057$  $\label{eq:condition} $$ \frac{167}{167}\frac{056}{143}\frac{141}{164}\frac{143}{145}\frac{162}{164}\frac{056}{156}\frac{145}{164}\frac{057}{164} $$$ \166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065  $\label{eq:condition} $$ \006\003\125\004\013\023\054\112\145\162\141\162\161\165$$ \151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103 \145\162\164\151\146\151\143\141\143\151\157\040\103\141\164\141 \154\141\156\145\163\061\017\060\015\006\003\125\004\003\023\006 \105\103\055\101\103\103

**END** 

CKA\_ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123 \061\073\060\071\006\003\125\004\012\023\062\101\147\145\156\143 \151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103  $\\ 145 \\ 162 \\ 164 \\ 151 \\ 146 \\ 151 \\ 143 \\ 141 \\ 143 \\ 151 \\ 157 \\ 040 \\ 050 \\ 116 \\ 111 \\ 106$ \040\121\055\060\070\060\061\061\067\066\055\111\051\061\050\060 \046\006\003\125\004\013\023\037\123\145\162\166\145\151\163\040  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013 \023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057 \167\167\167\056\143\141\164\143\145\162\164\056\156\145\164\057 \166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065 \060\063\006\003\125\004\013\023\054\112\145\162\141\162\161\165 \151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103 \145\162\164\151\146\151\143\141\143\151\157\040\103\141\164\141 \105\103\055\101\103\103

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\356\053\075\353\324\041\336\024\250\142\254\004\363\335 \304\001

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\126\060\202\004\076\240\003\002\001\002\002\020\356 \053\075\353\324\041\336\024\250\142\254\004\363\335\304\001\060

\015\006\011\052\206\110\206\367\015\001\001\005\005\000\060\201 \363\061\013\060\011\006\003\125\004\006\023\002\105\123\061\073 \060\071\006\003\125\004\012\023\062\101\147\145\156\143\151\141 \040\103\141\164\141\154\141\156\141\040\144\145\040\103\145\162 \164\151\146\151\143\141\143\151\157\040\050\116\111\106\040\121 \055\060\070\060\061\061\067\066\055\111\051\061\050\060\046\006 \003\125\004\013\023\037\123\145\162\166\145\151\163\040\120\165 \142\154\151\143\163\040\144\145\040\103\145\162\164\151\146\151 \143\141\143\151\157\061\065\060\063\006\003\125\004\013\023\054 \126\145\147\145\165\040\150\164\164\160\163\072\057\057\167\167 \167\056\143\141\164\143\145\162\164\056\156\145\164\057\166\145 \162\141\162\162\145\154\040\050\143\051\060\063\061\065\060\063 \006\003\125\004\013\023\054\112\145\162\141\162\161\165\151\141  $\label{eq:condition} $$ \040\105\156\164\151\164\141\164\163\040\144\145\040\103\145\162$$$  $\\ 164 \\ 151 \\ 146 \\ 151 \\ 143 \\ 141 \\ 143 \\ 151 \\ 157 \\ 040 \\ 103 \\ 141 \\ 164 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 141 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 154 \\ 1$ \156\145\163\061\017\060\015\006\003\125\004\003\023\006\105\103 \055\101\103\103\060\036\027\015\060\063\060\061\060\067\062\063 \060\060\060\060\132\027\015\063\061\060\061\060\067\062\062\065 \071\065\071\132\060\201\363\061\013\060\011\006\003\125\004\006  $\label{eq:condition} $$ \023\02\105\123\061\073\060\071\006\003\125\004\012\023\062\101 $$$ \147\145\156\143\151\141\040\103\141\164\141\154\141\156\141\040 \144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\040  $\label{eq:condition} $$ \050\116\111\106\040\121\055\060\070\060\061\061\067\066\055\111 $$$ \051\061\050\060\046\006\003\125\004\013\023\037\123\145\162\166 \145\151\163\040\120\165\142\154\151\143\163\040\144\145\040\103 \145\162\164\151\146\151\143\141\143\151\157\061\065\060\063\006 \003\125\004\013\023\054\126\145\147\145\165\040\150\164\164\160 \163\072\057\057\167\167\167\056\143\141\164\143\145\162\164\056 \156\145\164\057\166\145\162\141\162\162\145\154\040\050\143\051 \060\063\061\065\060\063\006\003\125\004\013\023\054\112\145\162  $\label{eq:condition} $$ 141\162\161\165\151\141\040\105\156\164\151\164\141\164\163\040$$ \144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\040 \103\141\164\141\154\141\156\145\163\061\017\060\015\006\003\125 \004\003\023\006\105\103\055\101\103\103\060\202\001\042\060\015 \006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001 \017\000\060\202\001\012\002\202\001\001\000\263\042\307\117\342 \227\102\225\210\107\203\100\366\035\027\363\203\163\044\036\121  $\label{eq:condition} $$ \363\230\212\303\222\270\377\100\220\005\160\207\140\311\000\251 $$$ \265\224\145\031\042\025\027\302\103\154\146\104\232\015\004\076  $\label{eq:condition} $$ \071\157\245\113\172\252\143\267\212\104\235\331\143\221\204\146$$ \340\050\017\272\102\343\156\216\367\024\047\223\151\356\221\016 \243\137\016\261\353\146\242\162\117\022\023\206\145\172\076\333 \117\007\364\247\011\140\332\072\102\231\307\262\177\263\026\225 \034\307\371\064\265\224\205\325\231\136\240\110\240\176\347\027 \145\270\242\165\270\036\363\345\102\175\257\355\363\212\110\144 \135\202\024\223\330\300\344\377\263\120\162\362\166\366\263\135 \102\120\171\320\224\076\153\014\000\276\330\153\016\116\052\354  $\label{eq:condition} $$ \076\322\314\202\242\030\145\063\023\167\236\232\135\032\023\330 $$$ 

\303\333\075\310\227\172\356\160\355\247\346\174\333\161\317\055 \224\142\337\155\326\365\070\276\077\245\205\012\031\270\250\330 \011\165\102\160\304\352\357\313\016\310\064\250\022\042\230\014 \270\023\224\266\113\354\360\320\220\347\047\002\003\001\000\001 \243\201\343\060\201\340\060\035\006\003\125\035\021\004\026\060  $\\024\\201\\022\\145\\143\\137\\141\\143\\143\\140\\143\\141\\164\\143\\145\\162$ \164\056\156\145\164\060\017\006\003\125\035\023\001\001\377\004 \005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377 \024\240\303\213\104\252\067\245\105\277\227\200\132\321\361\170 \242\233\351\135\215\060\177\006\003\125\035\040\004\170\060\166  $\label{eq:condition} $$ \0.060\164\0.06\0.01\0.053\0.06\0.01\0.04\0.01\3.65\1.70\0.01\0.03\0.01\0.12\0.060$ \145\060\054\006\010\053\006\001\005\005\007\002\001\026\040\150  $\label{eq:condition} $$ 164\160\163\072\057\057\167\167\167\056\143\141\164\143\145$$ \162\164\056\156\145\164\057\166\145\162\141\162\162\145\154\060 \065\006\010\053\006\001\005\005\007\002\002\060\051\032\047\126 \056\143\141\164\143\145\162\164\056\156\145\164\057\166\145\162 \141\162\162\145\154\040\060\015\006\011\052\206\110\206\367\015  $\label{eq:condition} $$ \001\001\005\005\000\003\202\001\001\000\240\110\133\202\001\366 $$$ \115\110\270\071\125\065\234\200\172\123\231\325\132\377\261\161 \073\314\071\011\224\136\326\332\357\276\001\133\135\323\036\330  $\label{eq:condition} $$ \frac{375}175\frac{315}240\frac{340}064\frac{223}277\frac{313}342\frac{206}234\sqrt{67}222}$ \220\126\034\334\353\051\005\345\304\236\307\065\337\212\014\315  $\label{eq:condition} $$ 305 \cdot 041 \cdot 103 \cdot 351 \cdot 252 \cdot 210 \cdot 345 \cdot 065 \cdot 300 \cdot 031 \cdot 102 \cdot 143 \cdot 132 \cdot 002 \cdot 136 \cdot 244$ \110\030\072\205\157\334\235\274\077\235\234\301\207\270\172\141 \010\351\167\013\177\160\253\172\335\331\227\054\144\036\205\277  $\label{eq:condition} $$ \274\164\226\241\303\172\022\354\014\032\156\203\014\074\350\162$ \106\237\373\110\325\136\227\346\261\241\370\344\357\106\045\224 \234\211\333\151\070\276\354\134\016\126\307\145\121\345\120\210 \210\277\102\325\053\075\345\371\272\236\056\263\312\364\163\222 \002\013\276\114\146\353\040\376\271\313\265\231\177\346\266\023 \372\312\113\115\331\356\123\106\006\073\306\116\255\223\132\201 \176\154\052\113\152\005\105\214\362\041\244\061\220\207\154\145 \234\235\245\140\225\072\122\177\365\321\253\010\156\363\356\133 \371\210\075\176\270\157\156\003\344\102

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE # For Server Distrust After: Sat Dec 28 00:00:00 2019 CKA\_NSS\_SERVER\_DISTRUST\_AFTER MULTILINE\_OCTAL \061\071\061\062\062\070\060\060\060\060\060\060\060\060\132 END

# For Email Distrust After: Wed Aug 31 00:00:00 2022 CKA\_NSS\_EMAIL\_DISTRUST\_AFTER MULTILINE\_OCTAL \062\062\060\070\063\061\060\060\060\060\060\060\060\132 END

# Trust for "EC-ACC"

```
# Issuer: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu https://www.catcert.net/verarrel
```

(c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES

# Serial Number:ee:2b:3d:eb:d4:21:de:14:a8:62:ac:04:f3:dd:c4:01

# Subject: CN=EC-ACC,OU=Jerarquia Entitats de Certificacio Catalanes,OU=Vegeu

https://www.catcert.net/verarrel (c)03,OU=Serveis Publics de Certificacio,O=Agencia Catalana de Certificacio (NIF Q-0801176-I),C=ES

# Not Valid Before: Tue Jan 07 23:00:00 2003

# Not Valid After: Tue Jan 07 22:59:59 2031

# Fingerprint (SHA-256):

88:49:7F:01:60:2F:31:54:24:6A:E2:8C:4D:5A:EF:10:F1:D8:7E:BB:76:62:6F:4A:E0:B7:F9:5B:A7:96:87:99

# Fingerprint (SHA1): 28:90:3A:63:5B:52:80:FA:E6:77:4C:0B:6D:A7:D6:BA:A6:4A:F2:E8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "EC-ACC"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\050\220\072\143\133\122\200\372\346\167\114\013\155\247\326\272

\246\112\362\350

**END** 

CKA CERT MD5 HASH MULTILINE OCTAL

\353\365\235\051\015\141\371\102\037\174\302\272\155\343\025\011

**END** 

### CKA\_ISSUER MULTILINE\_OCTAL

\060\201\363\061\013\060\011\006\003\125\004\006\023\002\105\123

\151\141\040\103\141\164\141\154\141\156\141\040\144\145\040\103

 $\\ 145 \\ 162 \\ 164 \\ 151 \\ 146 \\ 151 \\ 143 \\ 141 \\ 143 \\ 151 \\ 157 \\ 040 \\ 050 \\ 116 \\ 111 \\ 106$ 

 $\label{eq:condition} $$ \040\121\055\060\070\060\061\061\066\055\111\051\061\050\060 $$$ 

\046\006\003\125\004\013\023\037\123\145\162\166\145\151\163\040

\146\151\143\141\143\151\157\061\065\060\063\006\003\125\004\013

\023\054\126\145\147\145\165\040\150\164\164\160\163\072\057\057

\167\167\167\056\143\141\164\143\145\162\164\056\156\145\164\057\166\145\162\141\162\162\145\154\040\050\143\051\060\063\061\065

\060\063\006\003\125\004\013\023\054\112\145\162\141\162\161\165

\151\141\040\105\156\164\151\164\141\164\163\040\144\145\040\103

131\141\040\103\130\104\131\104\141\104\103\040\144\143\040\103

 $\\ 145 \\ 162 \\ 164 \\ 151 \\ 146 \\ 151 \\ 143 \\ 141 \\ 143 \\ 151 \\ 157 \\ 040 \\ 103 \\ 141 \\ 164 \\ 141 \\$ 

 $\label{thm:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local$ 

\105\103\055\101\103\103

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\356\053\075\353\324\041\336\024\250\142\254\004\363\335 \304\001

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

 ${\tt CKA\_TRUST\_EMAIL\_PROTECTION\ CK\_TRUST\ CKT\_NSS\_MUST\_VERIFY\_TRUST}$ 

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

```
#
# Certificate "Actalis Authentication Root CA"
# Issuer: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT
# Serial Number:57:0a:11:97:42:c4:e3:cc
# Subject: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT
# Not Valid Before: Thu Sep 22 11:22:02 2011
# Not Valid After: Sun Sep 22 11:22:02 2030
# Fingerprint (SHA-256):
55:92:60:84:EC:96:3A:64:B9:6E:2A:BE:01:CE:0B:A8:6A:64:FB:FE:BC:C7:AA:B5:AF:C1:55:B3:7F:D7:60:66
# Fingerprint (SHA1): F3:73:B3:87:06:5A:28:84:8A:F2:F3:4A:CE:19:2B:DD:C7:8E:9C:AC
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Actalis Authentication Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061
\\ \\ 043\\ \\ 060\\ 041\\ \\ 006\\ \\ 003\\ \\ 125\\ \\ 004\\ \\ 012\\ \\ 014\\ \\ 032\\ \\ 101\\ \\ 143\\ \\ 164\\ \\ 141\\ \\ 154\\ \\ 151
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143
\141\164\151\157\156\040\122\157\157\164\040\103\101
END
CKA ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061 $$
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061
\043\060\041\006\003\125\004\012\014\032\101\143\164\141\154\151
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\060\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101
\143\164\141\154\151\163\040\101\165\164\150\145\156\164\151\143
\141\164\151\157\156\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\127\012\021\227\102\304\343\314
END
CKA VALUE MULTILINE OCTAL
\060\202\005\273\060\202\003\243\240\003\002\001\002\002\010\127
\012\021\227\102\304\343\314\060\015\006\011\052\206\110\206\367
\015\001\001\013\005\000\060\153\061\013\060\011\006\003\125\004
```

\006\023\002\111\124\061\016\060\014\006\003\125\004\007\014\005 \115\151\154\141\156\061\043\060\041\006\003\125\004\012\014\032 \101\143\164\141\154\151\163\040\123\056\160\056\101\056\057\060

\063\063\065\070\065\062\060\071\066\067\061\047\060\045\006\003 \125\004\003\014\036\101\143\164\141\154\151\163\040\101\165\164 \150\145\156\164\151\143\141\164\151\157\156\040\122\157\157\164  $\label{eq:condition} $$ \040\103\101\060\036\027\015\061\061\060\071\062\062\061\061\062$ \062\060\062\132\027\015\063\060\060\071\062\062\061\061\062\062  $\label{eq:condition} $$ \060\062\132\060\153\061\013\060\011\006\003\125\004\006\023\002$ \111\124\061\016\060\014\006\003\125\004\007\014\005\115\151\154 \141\156\061\043\060\041\006\003\125\004\012\014\032\101\143\164 \141\154\151\163\040\123\056\160\056\101\056\057\060\063\063\065 \070\065\062\060\071\066\067\061\047\060\045\006\003\125\004\003  $\\ \langle 014 \rangle 036 \rangle 101 \rangle 143 \rangle 164 \rangle 141 \rangle 154 \rangle 151 \rangle 163 \rangle 040 \rangle 101 \rangle 165 \rangle 164 \rangle 150 \rangle 145 \rangle 156$ \060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  $\label{eq:condition} $$ \001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\011$  $\label{eq:condition} $$ \000\247\306\304\245\051\244\054\357\345\030\305\260\120\243\157 $$$ \121\073\237\012\132\311\302\110\070\012\302\034\240\030\177\221 \265\207\271\100\077\335\035\150\037\010\203\325\055\036\210\240 \370\217\126\217\155\231\002\222\220\026\325\137\010\154\211\327 \341\254\274\040\302\261\340\203\121\212\151\115\000\226\132\157 \057\300\104\176\243\016\344\221\315\130\356\334\373\307\036\105 \107\335\047\271\010\001\237\246\041\035\365\101\055\057\114\375 \050\255\340\212\255\042\264\126\145\216\206\124\217\223\103\051  $\label{eq:condition} $$ 36\071\106\170\243\060\043\272\315\360\175\023\127\300\135\322 $$$ \203\153\110\114\304\253\237\200\132\133\072\275\311\247\042\077 \200\047\063\133\016\267\212\014\135\007\067\010\313\154\322\172 \107\042\104\065\305\314\314\056\216\335\052\355\267\175\146\015 \137\141\121\042\125\033\343\106\343\343\075\320\065\142\232\333 \257\024\310\133\241\314\211\033\341\060\046\374\240\233\037\201 \247\107\037\004\353\243\071\222\006\237\231\323\277\323\352\117 \120\234\031\376\226\207\036\074\145\366\243\030\044\203\206\020  $\label{eq:condition} $$ 347\124\076\250\072\166\044\117\201\041\305\343\017\002\370\223 $$$ \224\107\040\273\376\324\016\323\150\271\335\304\172\204\202\343 \123\124\171\335\333\234\322\362\007\233\056\266\274\076\355\205 \155\357\045\021\362\227\032\102\141\367\112\227\350\213\261\020 \007\372\145\201\262\242\071\317\367\074\377\030\373\306\361\132 \213\131\342\002\254\173\222\320\116\024\117\131\105\366\014\136 \050\137\260\350\077\105\317\317\257\233\157\373\204\323\167\132 \225\157\254\224\204\236\356\274\300\112\217\112\223\370\104\041 \342\061\105\141\120\116\020\330\343\065\174\114\031\264\336\005 \277\243\006\237\310\265\315\344\037\327\027\006\015\172\225\164 \125\015\150\032\374\020\033\142\144\235\155\340\225\240\303\224 \007\127\015\024\346\275\005\373\270\237\346\337\213\342\306\347 \176\226\366\123\305\200\064\120\050\130\360\022\120\161\027\060 \272\346\170\143\274\364\262\255\233\053\262\376\341\071\214\136 \272\013\040\224\336\173\203\270\377\343\126\215\267\021\351\073 \214\362\261\301\135\235\244\013\114\053\331\262\030\365\265\237 \113\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035  $\label{eq:condition} $$ \016\004\026\004\024\122\330\210\072\310\237\170\146\355\211\363$ 

\173\070\160\224\311\002\002\066\320\060\017\006\003\125\035\023 \001\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035 \043\004\030\060\026\200\024\122\330\210\072\310\237\170\146\355 \211\363\173\070\160\224\311\002\002\066\320\060\016\006\003\125 \035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052 \206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\013 \173\162\207\300\140\246\111\114\210\130\346\035\210\367\024\144 \110\246\330\130\012\016\117\023\065\337\065\035\324\355\006\061 \310\201\076\152\325\335\073\032\062\356\220\075\021\322\056\364 \216\303\143\056\043\146\260\147\276\157\266\300\023\071\140\252  $\label{eq:condition} $$ \242\064\045\223\165\122\336\247\235\255\016\207\211\122\161\152$ \026\074\031\035\203\370\232\051\145\276\364\077\232\331\360\363 \132\207\041\161\200\115\313\340\070\233\077\273\372\340\060\115 \317\206\323\145\020\031\030\321\227\002\261\053\162\102\150\254 \240\275\116\132\332\030\277\153\230\201\320\375\232\276\136\025 \110\315\021\025\271\300\051\134\264\350\210\367\076\066\256\267 \142\375\036\142\336\160\170\020\034\110\133\332\274\244\070\272 \147\355\125\076\136\127\337\324\003\100\114\201\244\322\117\143 \247\011\102\011\024\374\000\251\302\200\163\117\056\300\100\331  $\label{eq:condition} $$ \021\173\110\352\172\002\300\323\353\050\001\046\130\164\301\300 $$$ \163\042\155\223\225\375\071\175\273\052\343\366\202\343\054\227 \137\116\037\221\224\372\376\054\243\330\166\032\270\115\262\070 \117\233\372\035\110\140\171\046\342\363\375\251\320\232\350\160 \217\111\172\326\345\275\012\016\333\055\363\215\277\353\343\244 \175\313\307\225\161\350\332\243\174\305\302\370\164\222\004\033 \206\254\244\042\123\100\266\254\376\114\166\317\373\224\062\300 \065\237\166\077\156\345\220\156\240\246\046\242\270\054\276\321  $\label{eq:condition} $$ \053\205\375\247\150\310\272\001\053\261\154\164\035\270\163\225 $$$ \347\356\267\307\045\360\000\114\000\262\176\266\013\213\034\363 \300\120\236\045\271\340\010\336\066\146\377\067\245\321\273\124  $\\ 144\\054\\311\\047\\265\\113\\222\\176\\145\\377\\323\\055\\341\\271\\116\\274$ \177\244\101\041\220\101\167\246\071\037\352\236\343\237\320\146 \157\005\354\252\166\176\277\153\026\240\353\265\307\374\222\124 \057\053\021\047\045\067\170\114\121\152\260\363\314\130\135\024 \361\152\110\025\377\302\007\266\261\215\017\216\134\120\106\263 \075\277\001\230\117\262\131\124\107\076\064\173\170\155\126\223 \056\163\352\146\050\170\315\035\024\277\240\217\057\056\270\056 \216\362\024\212\314\351\265\174\373\154\235\014\245\341\226 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Actalis Authentication Root CA"

<sup>#</sup> Issuer: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT

<sup>#</sup> Serial Number:57:0a:11:97:42:c4:e3:cc

<sup>#</sup> Subject: CN=Actalis Authentication Root CA,O=Actalis S.p.A./03358520967,L=Milan,C=IT

<sup>#</sup> Not Valid Before: Thu Sep 22 11:22:02 2011

```
# Fingerprint (SHA-256):
55:92:60:84:EC:96:3A:64:B9:6E:2A:BE:01:CE:0B:A8:6A:64:FB:FE:BC:C7:AA:B5:AF:C1:55:B3:7F:D7:60:66
# Fingerprint (SHA1): F3:73:B3:87:06:5A:28:84:8A:F2:F3:4A:CE:19:2B:DD:C7:8E:9C:AC
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Actalis Authentication Root CA"
CKA CERT SHA1 HASH MULTILINE OCTAL
\363\163\263\207\006\132\050\204\212\362\363\112\316\031\053\335
\307\216\234\254
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\label{eq:condition} $$ \frac{151}{301}015\frac{117}{007}\frac{243}{033}\frac{303}{376}\frac{126}{075}\frac{243}{021}\frac{366}{246} $$
END
CKA_ISSUER MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\124\061
\016\060\014\006\003\125\004\007\014\005\115\151\154\141\156\061
\163\040\123\056\160\056\101\056\057\060\063\063\065\070\065\062
\label{eq:condition} $$ \000\071\066\067\061\047\060\045\006\003\125\004\003\014\036\101 $$
 \\ 143 \\ 164 \\ 141 \\ 154 \\ 151 \\ 163 \\ 040 \\ 101 \\ 165 \\ 164 \\ 150 \\ 145 \\ 156 \\ 164 \\ 151 \\ 143 \\
\141\164\151\157\156\040\122\157\157\164\040\103\101
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\010\127\012\021\227\102\304\343\314
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
{\tt CKA\_TRUST\_EMAIL\_PROTECTION\ CK\_TRUST\ CKT\_NSS\_TRUSTED\_DELEGATOR}
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Buypass Class 2 Root CA"
# Issuer: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO
# Serial Number: 2 (0x2)
# Subject: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO
# Not Valid Before: Tue Oct 26 08:38:03 2010
# Not Valid After: Fri Oct 26 08:38:03 2040
# Fingerprint (SHA-256):
9A:11:40:25:19:7C:5B:B9:5D:94:E6:3D:55:CD:43:79:08:47:B6:46:B2:3C:DF:11:AD:A4:A0:0E:FF:15:FB:48
# Fingerprint (SHA1): 49:0A:75:74:DE:87:0A:47:FE:58:EE:F6:C7:6B:EB:C6:0B:12:40:99
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

# Not Valid After: Sun Sep 22 11:22:02 2030

CKA\_LABEL UTF8 "Buypass Class 2 Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA SUBJECT MULTILINE OCTAL

 $\label{lem:condition} $$\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163\040\103\1060\003\063\006\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040\062\040\122\157\157\164\040\103\101\ END$ 

CKA\_ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{lem:condition} $$ \060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163\040\103\60\003\125\004\003\014\027\102\165\171\160\141\163\163\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101\ END$ 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

**END** 

#### CKA VALUE MULTILINE OCTAL

\060\202\005\131\060\202\003\101\240\003\002\001\002\002\001\002  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\013\005\000\060$$$ \116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035 \060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163 \040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060 \036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040  $\label{eq:condition} $$103\154\141\163\163\040\062\040\122\157\157\164\040\103\101\060$$ \036\027\015\061\060\061\060\062\066\060\070\063\070\060\063\132 \027\015\064\060\061\060\062\066\060\070\063\070\060\063\132\060  $\label{eq:condition} $$ \frac{116}{061}\frac{003}{003}\frac{125}{004}\frac{006}{023}\frac{116}{117}\frac{001}{035} $$$ \060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163 \040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060 \036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040 \103\154\141\163\163\040\062\040\122\157\157\164\040\103\101\060 \202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001 \005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000 \327\307\136\367\301\007\324\167\373\103\041\364\364\365\151\344 \356\062\001\333\243\206\037\344\131\015\272\347\165\203\122\353 \352\034\141\025\110\273\035\007\312\214\256\260\334\226\235\352 \303\140\222\206\202\050\163\234\126\006\377\113\144\360\014\052 \067\111\265\345\317\014\174\356\361\112\273\163\060\145\363\325 \057\203\266\176\343\347\365\236\253\140\371\323\361\235\222\164 \212\344\034\226\254\133\200\351\265\364\061\207\243\121\374\307 \176\241\157\216\123\167\324\227\301\125\063\222\076\030\057\165 \324\255\206\111\313\225\257\124\006\154\330\006\023\215\133\377 \341\046\031\131\300\044\272\201\161\171\220\104\120\150\044\224 \137\270\263\021\361\051\101\141\243\101\313\043\066\325\301\361

\062\120\020\116\177\364\206\223\354\204\323\216\274\113\277\134 \001\116\007\075\334\024\212\224\012\244\352\163\373\013\121\350 \023\007\030\372\016\361\053\321\124\025\175\074\341\367\264\031 \102\147\142\136\167\340\242\125\354\266\331\151\027\325\072\257 \104\355\112\305\236\344\172\047\174\345\165\327\252\313\045\347 \337\153\012\333\017\115\223\116\250\240\315\173\056\362\131\001 \152\267\015\270\007\201\176\213\070\033\070\346\012\127\231\075 \356\041\350\243\365\014\026\335\213\354\064\216\234\052\034\000  $\label{eq:condition} $$ \025\027\215\150\203\322\160\237\030\010\315\021\150\325\311\153$ \122\315\304\106\217\334\265\363\330\127\163\036\351\224\071\004 \277\323\336\070\336\264\123\354\151\034\242\176\304\217\344\033  $\label{eq:condition} $$ 160\255\362\242\371\373\367\026\144\146\151\237\111\121\242\342$ \025\030\147\006\112\177\325\154\265\115\263\063\340\141\353\135 \276\351\230\017\062\327\035\113\074\056\132\001\122\221\011\362  $\label{eq:condition} $$ 337 \times 215 \times 330 \times 144 \times 252 \times 1344 \times 376 \times 303 \times 67 \times 236 \times 24122 \times 144 \times 376 \times 303 \times 144 \times 376 \times 303 \times 316 \times 1422 \times 316 \times 3$ \077\364\342\314\362\141\223\321\375\147\153\327\122\256\277\150 \253\100\103\240\127\065\123\170\360\123\370\141\102\007\144\306 \327\157\233\114\070\015\143\254\142\257\066\213\242\163\012\015 \365\041\275\164\252\115\352\162\003\111\333\307\137\035\142\143 \307\375\335\221\354\063\356\365\155\264\156\060\150\336\310\326 \046\260\165\136\173\264\007\040\230\241\166\062\270\115\154\117 \002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023  $\\ \\001\\\\001\\\\377\\\\004\\\\005\\\\006\\\\0005\\\\000\\\\0001\\\\001\\\\001\\\\377\\\\060\\\\003\\\\006\\\\003\\\\125\\\\035$ \016\004\026\004\024\311\200\167\340\142\222\202\365\106\234\363 \272\367\114\303\336\270\243\255\071\060\016\006\003\125\035\017 \001\001\377\004\004\003\002\001\006\060\015\006\011\052\206\110 \206\367\015\001\001\013\005\000\003\202\002\001\000\123\137\041 \365\272\260\072\122\071\054\222\260\154\000\311\357\316\040\357 \006\362\226\236\351\244\164\177\172\026\374\267\365\266\373\025 \033\077\253\246\300\162\135\020\261\161\356\274\117\343\255\254  $\label{eq:condition} $$ \056\161\056\257\304\343\255\243\275\014\021\247\264\377 $$$ \112\262\173\020\020\037\247\127\101\262\300\256\364\054\131\326 \107\020\210\363\041\121\051\060\312\140\206\257\106\253\035\355 \072\133\260\224\336\104\343\101\010\242\301\354\035\326\375\117 \266\326\107\320\024\013\312\346\312\265\173\167\176\101\037\136 \203\307\266\214\071\226\260\077\226\201\101\157\140\220\342\350 \371\373\042\161\331\175\263\075\106\277\264\204\257\220\034\017 \217\022\152\257\357\356\036\172\256\002\112\212\027\053\166\376  $\verb|254|124|211|044|054|117|077|266|262|247|116|214|250|221|227|373|$  $\label{eq:condition} $$ \051\306\173\134\055\271\313\146\266\267\250\133\022\121\205\265$ \011\176\142\170\160\376\251\152\140\266\035\016\171\014\375\312 \352\044\200\162\303\227\077\362\167\253\103\042\012\307\353\266 \014\204\202\054\200\153\101\212\010\300\353\245\153\337\231\022 \313\212\325\136\200\014\221\340\046\010\066\110\305\372\070\021  $\label{eq:condition} $$ \065\377\045\203\055\362\172\277\332\375\216\376\245\313\105\054$$$ \037\304\210\123\256\167\016\331\232\166\305\216\054\035\243\272 \325\354\062\256\300\252\254\367\321\172\115\353\324\007\342\110 \367\042\216\260\244\237\152\316\216\262\262\140\364\243\042\320  $\label{eq:control} $$ \additing $$ \additi$ 

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Buypass Class 2 Root CA"

# Issuer: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO

# Serial Number: 2 (0x2)

# Subject: CN=Buypass Class 2 Root CA,O=Buypass AS-983163327,C=NO

# Not Valid Before: Tue Oct 26 08:38:03 2010 # Not Valid After : Fri Oct 26 08:38:03 2040

# Fingerprint (SHA-256):

9A:11:40:25:19:7C:5B:B9:5D:94:E6:3D:55:CD:43:79:08:47:B6:46:B2:3C:DF:11:AD:A4:A0:0E:FF:15:FB:48

# Fingerprint (SHA1): 49:0A:75:74:DE:87:0A:47:FE:58:EE:F6:C7:6B:EB:C6:0B:12:40:99

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Buypass Class 2 Root CA"

 $CKA\_CERT\_SHA1\_HASH\ MULTILINE\_OCTAL$ 

\111\012\165\164\336\207\012\107\376\130\356\366\307\153\353\306\013\022\100\231

**END** 

CKA CERT MD5 HASH MULTILINE OCTAL

\106\247\322\376\105\373\144\132\250\131\220\233\170\104\233\051

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163\040\103\125\004\003\014\027\102\165\171\160\141\163\163\040\103\154\141\163\163\040\062\040\122\157\157\164\040\103\101$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Buypass Class 3 Root CA"

#

# Issuer: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO

# Serial Number: 2 (0x2)

# Subject: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO

# Not Valid Before: Tue Oct 26 08:28:58 2010 # Not Valid After : Fri Oct 26 08:28:58 2040

# Fingerprint (SHA-256):

ED:F7:EB:BC:A2:7A:2A:38:4D:38:7B:7D:40:10:C6:66:E2:ED:B4:84:3E:4C:29:B4:AE:1D:5B:93:32:E6:B2:4D

# Fingerprint (SHA1): DA:FA:F7:FA:66:84:EC:06:8F:14:50:BD:C7:C2:81:A5:BC:A9:64:57

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Buypass Class 3 Root CA"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000116\001\006\003\125\004\006\023\002\116\117\061\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101\ END$ 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000116\001\006\003\125\004\006\023\002\116\117\061\035\060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101\ END$ 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\002

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\027\015\064\060\061\060\062\066\060\070\062\070\065\070\132\060 \116\061\013\060\011\006\003\125\004\006\023\002\116\117\061\035 \060\033\006\003\125\004\012\014\024\102\165\171\160\141\163\163 \040\101\123\055\071\070\063\061\066\063\063\062\067\061\040\060 \036\006\003\125\004\003\014\027\102\165\171\160\141\163\163\040 \103\154\141\163\163\040\063\040\122\157\157\164\040\103\101\060 \202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001 \005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000 \245\332\012\225\026\120\343\225\362\136\235\166\061\006\062\172 \233\361\020\166\270\000\232\265\122\066\315\044\107\260\237\030 \144\274\232\366\372\325\171\330\220\142\114\042\057\336\070\075 \326\340\250\351\034\054\333\170\021\351\216\150\121\025\162\307 \363\063\207\344\240\135\013\134\340\127\007\052\060\365\315\304 \306\304\212\343\360\050\013\364\166\230\241\213\207\125\262\072 \023\374\267\076\047\067\216\042\343\250\117\052\357\140\273\075 \267\071\303\016\001\107\231\135\022\117\333\103\372\127\241\355 \371\235\276\021\107\046\133\023\230\253\135\026\212\260\067\034 \127\235\105\377\210\226\066\277\273\312\007\173\157\207\143\327 \320\062\152\326\135\154\014\361\263\156\071\342\153\061\056\071 \000\047\024\336\070\300\354\031\146\206\022\350\235\162\026\023 \144\122\307\251\067\034\375\202\060\355\204\030\035\364\256\134 \377\160\023\000\353\261\365\063\172\113\326\125\370\005\215\113 \151\260\365\263\050\066\134\024\304\121\163\115\153\013\361\064 \007\333\027\071\327\334\050\173\153\365\237\363\056\301\117\027 \052\020\363\314\312\350\353\375\153\253\056\232\237\055\202\156 \004\324\122\001\223\055\075\206\374\176\374\337\357\102\035\246 \153\357\271\040\306\367\275\240\247\225\375\247\346\211\044\330 \314\214\064\154\342\043\057\331\022\032\041\271\125\221\157\013 \221\171\031\014\255\100\210\013\160\342\172\322\016\330\150\110  $\label{eq:condition} $$ \273\202\023\071\020\130\351\330\052\007\306\022\333\130\333\322 $$$ \073\125\020\107\005\025\147\142\176\030\143\246\106\077\011\016 \124\062\136\277\015\142\172\047\357\200\350\333\331\113\006\132 \067\132\045\320\010\022\167\324\157\011\120\227\075\310\035\303 \337\214\105\060\126\306\323\144\253\146\363\300\136\226\234\303 \304\357\303\174\153\213\072\171\177\263\111\317\075\342\211\237 \240\060\113\205\271\234\224\044\171\217\175\153\251\105\150\017  $\label{eq:condition} $$ \053\320\361\332\034\313\151\270\312\111\142\155\310\320\143\142$ \335\140\017\130\252\217\241\274\005\245\146\242\317\033\166\262 \204\144\261\114\071\122\300\060\272\360\214\113\002\260\266\267 \002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023 \001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035 \016\004\026\004\024\107\270\315\377\345\157\356\370\262\354\057 \116\016\371\045\260\216\074\153\303\060\016\006\003\125\035\017  $\label{eq:condition} $$ 0.001 \times 377 \times 0.04 \times 0.03 \times 0.02 \times 0.01 \times 0.06 \times 0.015 \times 0.06 \times 0.011 \times 0.02 \times 0.010 \times 0.000 \times 0.000$ \206\367\015\001\001\013\005\000\003\202\002\001\000\000\040\043 \101\065\004\220\302\100\142\140\357\342\065\114\327\077\254\342 \064\220\270\241\157\166\372\026\026\244\110\067\054\351\220\302

\362\074\370\012\237\330\201\345\273\133\332\045\054\244\247\125 \161\044\062\366\310\013\362\274\152\370\223\254\262\007\302\137 \237\333\314\310\212\252\276\152\157\341\111\020\314\061\327\200  $\label{eq:condition} $$ \273\273\310\330\242\016\144\127\352\242\365\302\251\061\025\322 $$$ \040\152\354\374\042\001\050\317\206\270\200\036\251\314\021\245  $\label{eq:condition} $$ \074\362\026\263\107\235\374\322\200\041\304\313\320\107\160\101 $$$ \241\312\203\031\010\054\155\362\135\167\234\212\024\023\324\066  $\label{eq:condition} $$ \034\222\360\345\006\067\334\246\346\220\233\070\217\134\153\033$  $\label{eq:condition} $$ 106\206\103\102\137\076\001\007\123\124\135\145\175\367\212\163$$ \241\232\124\132\037\051\103\024\047\302\205\017\265\210\173\032  $\label{eq:condition} $$ \073\224\267\035\140\247\265\234\347\051\151\127\132\233\223\172$ \103\060\033\003\327\142\310\100\246\252\374\144\344\112\327\221 \123\001\250\040\210\156\234\137\104\271\313\140\201\064\354\157 \323\175\332\110\137\353\264\220\274\055\251\034\013\254\034\325  $\label{eq:condition} $$ \242\150\040\200\004\326\374\261\217\057\273\112\061\015\112\206 $$$ \034\353\342\066\051\046\365\332\330\304\362\165\141\317\176\256 \166\143\112\172\100\145\223\207\370\036\200\214\206\345\206\326 \217\016\374\123\054\140\350\026\141\032\242\076\103\173\315\071 \140\124\152\365\362\211\046\001\150\203\110\242\063\350\311\004 \221\262\021\064\021\076\352\320\103\031\037\003\223\220\014\377 \121\075\127\364\101\156\341\313\240\276\353\311\143\315\155\314 \344\370\066\252\150\235\355\275\135\227\160\104\015\266\016\065  $\label{eq:condition} $$ 34\sqrt{341}014\sqrt{135}\sqrt{273}\sqrt{240}\sqrt{121}\sqrt{224}\sqrt{313}\sqrt{176}\sqrt{26}\sqrt{353}\sqrt{21}\sqrt{57}\sqrt{243}\sqrt{222}$ \105\310\114\161\331\274\311\231\122\127\106\057\120\317\275\065 \151\364\075\025\316\006\245\054\017\076\366\201\272\224\273\303 \273\277\145\170\322\206\171\377\111\073\032\203\014\360\336\170 \354\310\362\115\114\032\336\202\051\370\301\132\332\355\356\346  $\\ \langle 047 \rangle 136 \rangle 350 \rangle 105 \rangle 320 \rangle 235 \rangle 034 \rangle 121 \rangle 250 \rangle 150 \rangle 253 \rangle 104 \rangle 343 \rangle 320 \rangle 213 \rangle 152$ \343\370\073\273\334\115\327\144\362\121\276\346\252\253\132\351 \061\356\006\274\163\277\023\142\012\237\307\271\227

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "Buypass Class 3 Root CA"
```

ED:F7:EB:BC:A2:7A:2A:38:4D:38:7B:7D:40:10:C6:66:E2:ED:B4:84:3E:4C:29:B4:AE:1D:5B:93:32:E6:B2:4D

# Fingerprint (SHA1): DA:FA:F7:FA:66:84:EC:06:8F:14:50:BD:C7:C2:81:A5:BC:A9:64:57

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

<sup>#</sup> Issuer: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO

<sup>#</sup> Serial Number: 2 (0x2)

<sup>#</sup> Subject: CN=Buypass Class 3 Root CA,O=Buypass AS-983163327,C=NO

<sup>#</sup> Not Valid Before: Tue Oct 26 08:28:58 2010 # Not Valid After : Fri Oct 26 08:28:58 2040

<sup>#</sup> Fingerprint (SHA-256):

```
CKA CERT SHA1 HASH MULTILINE OCTAL
\332\372\367\372\146\204\354\006\217\024\120\275\307\302\201\245
\274\251\144\127
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\075\073\030\236\054\144\132\350\325\210\316\016\371\067\302\354
END
CKA_ISSUER MULTILINE_OCTAL
\060\116\061\013\060\011\006\003\125\004\006\023\002\116\117\061
\label{eq:condition} $$ \035\060\03\125\004\012\014\024\102\165\171\160\141\163
\163\040\101\123\055\071\070\063\061\066\063\063\062\067\061\040
\060\036\006\003\125\004\003\014\027\102\165\171\160\141\163\163
\label{eq:condition} $$ \040\103\154\141\163\163\040\063\040\122\157\157\164\040\103\101
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\001\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "T-TeleSec GlobalRoot Class 3"
# Issuer: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
# Serial Number: 1 (0x1)
# Subject: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
# Not Valid Before: Wed Oct 01 10:29:56 2008
# Not Valid After: Sat Oct 01 23:59:59 2033
# Fingerprint (SHA-256):
FD:73:DA:D3:1C:64:4F:F1:B4:3B:EF:0C:CD:DA:96:71:0B:9C:D9:87:5E:CA:7E:31:70:7A:F3:E9:6D:52:2B:BD
# Fingerprint (SHA1): 55:A6:72:3E:CB:F2:EC:CD:C3:23:74:70:19:9D:2A:BE:11:E3:81:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
```

CKA LABEL UTF8 "Buypass Class 3 Root CA"

**END** 

CKA ID UTF8 "0"

#### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \060\201\202\061\013\060\011\006\003\125\004\012\014\042\124\055\123\171\163\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154\141\163\163\040\063$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

**END** 

#### CKA VALUE MULTILINE OCTAL

\060\202\003\303\060\202\002\253\240\003\002\001\002\002\001\001  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\013\005\000\060$$$ \201\202\061\013\060\011\006\003\125\004\006\023\002\104\105\061 \053\060\051\006\003\125\004\012\014\042\124\055\123\171\163\164 \145\155\163\040\105\156\164\145\162\160\162\151\163\145\040\123 \145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035  $\\ \\006\\ \\003\\ \\125\\ \\004\\ \\013\\ \\014\\ \\026\\ \\124\\ \\055\\ \\123\\ \\171\\ \\163\\ \\164\\ \\145\\ \\155\\ \\163$ \040\124\162\165\163\164\040\103\145\156\164\145\162\061\045\060 \043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145  $\\ 143 \\ 040 \\ 107 \\ 154 \\ 157 \\ 142 \\ 141 \\ 154 \\ 122 \\ 157 \\ 157 \\ 164 \\ 040 \\ 103 \\ 154 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 141 \\ 1$ \163\163\040\063\060\036\027\015\060\070\061\060\060\061\061\060 \062\071\065\066\132\027\015\063\063\061\060\060\061\062\063\065 \071\065\071\132\060\201\202\061\013\060\011\006\003\125\004\006 \023\002\104\105\061\053\060\051\006\003\125\004\012\014\042\124 \055\123\171\163\164\145\155\163\040\105\156\164\145\162\160\162 \151\163\145\040\123\145\162\166\151\143\145\163\040\107\155\142 \110\061\037\060\035\006\003\125\004\013\014\026\124\055\123\171 \163\164\145\155\163\040\124\162\165\163\164\040\103\145\156\164 \145\162\061\045\060\043\006\003\125\004\003\014\034\124\055\124 \145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157 \164\040\103\154\141\163\163\040\063\060\202\001\042\060\015\006 \011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017 \000\060\202\001\012\002\202\001\001\000\275\165\223\360\142\042 \157\044\256\340\172\166\254\175\275\331\044\325\270\267\374\315 \360\102\340\353\170\210\126\136\233\232\124\035\115\014\212\366 \323\317\160\364\122\265\330\223\004\343\106\206\161\101\112\053 \360\052\054\125\003\326\110\303\340\071\070\355\362\134\074\077

\104\274\223\075\141\253\116\315\015\276\360\040\047\130\016\104 \177\004\032\207\245\327\226\024\066\220\320\111\173\241\165\373 \032\153\163\261\370\316\251\011\054\362\123\325\303\024\104\270 \206\245\366\213\053\071\332\243\063\124\331\372\162\032\367\042  $\label{eq:condition} $$ \025\034\210\221\153\177\146\345\303\152\200\260\044\363\337\206$ \105\210\375\031\177\165\207\037\037\261\033\012\163\044\133\271 \145\340\054\124\310\140\323\146\027\077\341\314\124\063\163\221  $\label{eq:condition} $$ \002\072\246\177\173\166\071\242\037\226\266\070\256\265\310\223 $$$ \164\035\236\271\264\345\140\235\057\126\321\340\353\136\133\114 \022\160\014\154\104\040\253\021\330\364\031\366\322\234\122\067 \347\372\266\302\061\073\112\324\024\231\255\307\032\365\135\137  $\label{eq:condition} $$ \372\07\270\174\015\037\326\203\036\263\002\003\001\000\001\243$ \102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  $\label{eq:condition} $$ \003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004$  $\label{eq:condition} $$ \003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\265$ \003\367\166\073\141\202\152\022\252\030\123\353\003\041\224\277 \376\316\312\060\015\006\011\052\206\110\206\367\015\001\001\013 \005\000\003\202\001\001\000\126\075\357\224\325\275\332\163\262 \130\276\256\220\255\230\047\227\376\001\261\260\122\000\270\115 \344\033\041\164\033\176\300\356\136\151\052\045\257\134\326\035 \332\322\171\311\363\227\051\340\206\207\336\004\131\017\361\131  $\label{eq:condition} $$ 324\144\205\113\231\257\045\004\036\311\106\251\227\336\202\262$  $\label{eq:condition} $$ \033\160\237\234\366\257\161\061\335\173\005\245\054\323\271\312$ \107\366\312\362\366\347\255\271\110\077\274\026\267\301\155\364 \352\011\257\354\363\265\347\005\236\246\036\212\123\121\326\223 \201\314\164\223\366\271\332\246\045\005\164\171\132\176\100\076 \202\113\046\021\060\156\341\077\101\307\107\000\065\325\365\323 \367\124\076\201\075\332\111\152\232\263\357\020\075\346\353\157 \321\310\042\107\313\314\317\001\061\222\331\030\343\042\276\011 \036\032\076\132\262\344\153\014\124\172\175\103\116\270\211\245 \173\327\242\075\226\206\314\362\046\064\055\152\222\235\232\032 \320\060\342\135\116\004\260\137\213\040\176\167\301\075\225\202 \321\106\232\073\074\170\270\157\241\320\015\144\242\170\036\051 \116\223\303\244\124\024\133

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "T-TeleSec GlobalRoot Class 3"

<sup>#</sup> Issuer: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

<sup>#</sup> Serial Number: 1 (0x1)

<sup>#</sup> Subject: CN=T-TeleSec GlobalRoot Class 3,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH.C=DE

<sup>#</sup> Not Valid Before: Wed Oct 01 10:29:56 2008 # Not Valid After : Sat Oct 01 23:59:59 2033

<sup>#</sup> Fingerprint (SHA-256):

```
FD:73:DA:D3:1C:64:4F:F1:B4:3B:EF:0C:CD:DA:96:71:0B:9C:D9:87:5E:CA:7E:31:70:7A:F3:E9:6D:52:2B:BD
# Fingerprint (SHA1): 55:A6:72:3E:CB:F2:EC:CD:C3:23:74:70:19:9D:2A:BE:11:E3:81:D1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "T-TeleSec GlobalRoot Class 3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\125\246\162\076\313\362\354\315\303\043\164\160\031\235\052\276
\021\343\201\321
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\312\373\100\250\116\071\222\212\035\376\216\057\304\047\352\357
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\label{eq:condition} $$ \061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
\label{eq:condition} $$ \006\003\125\004\013\014\026\124\055\123\171\163\164\145\155$
\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\\ 145\\143\\040\\107\\154\\157\\142\\141\\154\\122\\157\\157\\164\\040\\103\\154
\141\163\163\040\063
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
{\tt CKA\_TRUST\_EMAIL\_PROTECTION\ CK\_TRUST\ CKT\_NSS\_MUST\_VERIFY\_TRUST}
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "D-TRUST Root Class 3 CA 2 2009"
# Issuer: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
# Serial Number: 623603 (0x983f3)
# Subject: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
# Not Valid Before: Thu Nov 05 08:35:58 2009
# Not Valid After: Mon Nov 05 08:35:58 2029
# Fingerprint (SHA-256):
49:E7:A4:42:AC:F0:EA:62:87:05:00:54:B5:25:64:B6:50:E4:F4:9E:42:E3:48:D6:AA:38:E0:39:E9:57:B1:C1
# Fingerprint (SHA1): 58:E8:AB:B0:36:15:33:FB:80:F7:9B:1B:6D:29:D3:FF:8D:5F:00:F0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

CKA\_LABEL UTF8 "D-TRUST Root Class 3 CA 2 2009"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000115\061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003\125\0004\012\014\014\104\055\124\162\165\163\164\040\107\155\142\110\061\047\060\045\006\003\125\0004\003\014\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071$  END

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000115\061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071$  END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\003\011\203\363

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\063\060\202\003\033\240\003\002\001\002\002\003\011 \203\363\060\015\006\011\052\206\110\206\367\015\001\001\013\005 \000\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105 \061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165 \163\164\040\107\155\142\110\061\047\060\045\006\003\125\004\003 \014\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103 \154\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071 \060\036\027\015\060\071\061\061\060\065\060\070\063\065\065\070 \132\027\015\062\071\061\061\060\065\060\070\063\065\065\070\132  $\label{eq:condition} $$ \060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061 $$$ \025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163 \164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014 \036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154 \141\163\163\040\063\040\103\101\040\062\040\062\060\060\071\060 \202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001 \005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000 \323\262\112\317\172\107\357\165\233\043\372\072\057\326\120\105 \211\065\072\306\153\333\376\333\000\150\250\340\003\021\035\067 \120\010\237\115\112\150\224\065\263\123\321\224\143\247\040\126 \257\336\121\170\354\052\075\363\110\110\120\076\012\337\106\125 \213\047\155\303\020\115\015\221\122\103\330\207\340\135\116\066 \265\041\312\137\071\100\004\137\133\176\314\243\306\053\251\100 \036\331\066\204\326\110\363\222\036\064\106\040\044\301\244\121  $\label{eq:condition} $$ \frac{112 \cdot 32 \cdot 357 \cdot 120 \cdot 077 \cdot 151 \cdot 135 \cdot 031 \cdot 177 \cdot 105 \cdot 303 \cdot 307 \cdot 001 \cdot 217 \cdot 121}{121} $$$ \311\043\350\162\256\264\274\126\011\177\022\313\034\261\257\051 \220\012\311\125\314\017\323\264\032\355\107\065\132\112\355\234 \163\004\041\320\252\275\014\023\265\000\312\046\154\304\153\014

\224\132\225\224\332\120\232\361\377\245\053\146\061\244\311\070 \240\337\035\037\270\011\056\363\247\350\147\122\253\225\037\340 \106\076\330\244\303\312\132\305\061\200\350\110\232\237\224\151 \376\031\335\330\163\174\201\312\226\336\216\355\263\062\005\145 \204\064\346\346\375\127\020\265\137\166\277\057\260\020\015\305  $\label{eq:condition} $$ \002\003\001\000\001\243\202\001\032\060\202\001\026\060\017\006$ \003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035 \006\003\125\035\016\004\026\004\024\375\332\024\304\237\060\336 \041\275\036\102\071\374\253\143\043\111\340\361\204\060\016\006 \003\125\035\017\001\001\377\004\004\003\002\001\006\060\201\323  $\label{eq:condition} $$ \006\003\125\035\037\004\201\313\060\201\310\060\201\200\240\176$  $\label{eq:condition} $$ \240\174\206\172\154\144\141\160\072\057\057\144\151\162\145\143$$ \164\157\162\171\056\144\055\164\162\165\163\164\056\156\145\164  $\begin{tabular}{l} $$ \begin{tabular}{l} $0.057 \ 1.03 \ 1.16 \ 0.075 \ 1.04 \ 0.055 \ 1.24 \ 1.22 \ 1.25 \ 1.23 \ 1.24 \ 0.45 \ 0.62 \ 0.60 \ 1.22 \ 1.57 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \ 0.057 \$ \157\164\045\062\060\103\154\141\163\163\045\062\060\063\045\062 \060\103\101\045\062\060\062\045\062\060\062\060\060\060\071\054\117  $\\ \begin{tabular}{l} $0.75 \\ 1.04 \\ 0.055 \\ 1.24 \\ 1.62 \\ 1.65 \\ 1.63 \\ 1.64 \\ 0.45 \\ 0.62 \\ 0.60 \\ 1.07 \\ 1.55 \\ 1.42 \\ 1.10 \\ 0.54 \\ 0.62 \\ 0.60 \\ 1.07 \\ 1.55 \\ 1.42 \\ 1.10 \\ 0.54 \\ 0.62 \\ 0.60 \\ 1.07 \\ 1.55 \\ 1.42 \\ 1.10 \\ 0.54 \\ 0.62 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60 \\ 0.60$ \103\075\104\105\077\143\145\162\164\151\146\151\143\141\164\145 \162\145\166\157\143\141\164\151\157\156\154\151\163\164\060\103 \240\101\240\077\206\075\150\164\164\160\072\057\057\167\167\167 \056\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154 \057\144\055\164\162\165\163\164\137\162\157\157\164\137\143\154  $\\ 141\\163\\163\\137\\063\\137\\143\\141\\137\\062\\137\\062\\060\\060\\060\\071\\056$ \143\162\154\060\015\006\011\052\206\110\206\367\015\001\001\013  $\label{eq:condition} $$ \005\000\003\202\001\000\177\227\333\060\310\337\244\234\175 $$$ \041\172\200\160\316\024\022\151\210\024\225\140\104\001\254\262 \351\060\117\233\120\302\146\330\176\215\060\265\160\061\351\342 \151\307\363\160\333\040\025\206\320\015\360\276\254\001\165\204 \316\176\237\115\277\267\140\073\234\363\312\035\342\136\150\330 \243\235\227\345\100\140\322\066\041\376\320\264\270\027\332\164 \243\177\324\337\260\230\002\254\157\153\153\054\045\044\162\241 \145\356\045\132\345\346\062\347\362\337\253\111\372\363\220\151 \043\333\004\331\347\134\130\374\145\324\227\276\314\374\056\012 \314\045\052\065\004\370\140\221\025\165\075\101\377\043\037\031 \310\154\353\202\123\004\246\344\114\042\115\215\214\272\316\133 \163\354\144\124\120\155\321\234\125\373\151\303\066\303\214\274 \074\205\246\153\012\046\015\340\223\230\140\256\176\306\044\227 \212\141\137\221\216\146\222\011\207\066\315\213\233\055\076\366  $\label{eq:condition} $$ 121\324\120\324\131\050\275\203\362\314\050\173\123\206\155\330 $$$  $\label{eq:condition} $$ \046\210\160\327\352\221\315\076\271\312\300\220\156\132\306\136$ \164\145\327\134\376\243\342

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "D-TRUST Root Class 3 CA 2 2009"

<sup>#</sup> Issuer: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE

```
# Subject: CN=D-TRUST Root Class 3 CA 2 2009,O=D-Trust GmbH,C=DE
# Not Valid Before: Thu Nov 05 08:35:58 2009
# Not Valid After: Mon Nov 05 08:35:58 2029
# Fingerprint (SHA-256):
49:E7:A4:42:AC:F0:EA:62:87:05:00:54:B5:25:64:B6:50:E4:F4:9E:42:E3:48:D6:AA:38:E0:39:E9:57:B1:C1
# Fingerprint (SHA1): 58:E8:AB:B0:36:15:33:FB:80:F7:9B:1B:6D:29:D3:FF:8D:5F:00:F0
{\tt CKA\_CLASS\ CK\_OBJECT\_CLASS\ CKO\_NSS\_TRUST}
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST Root Class 3 CA 2 2009"
CKA CERT SHA1 HASH MULTILINE OCTAL
\130\350\253\260\066\025\063\373\200\367\233\033\155\051\323\377
\215\137\000\360
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\315\340\045\151\215\107\254\234\211\065\220\367\375\121\075\057
END
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\label{eq:condition} $$ 164\040\107\155\142\110\061\047\060\045\006\003\125\004\003\014
\036\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154
\141\163\163\040\063\040\103\101\040\062\040\062\060\060\071
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\003\011\203\363
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "D-TRUST Root Class 3 CA 2 EV 2009"
# Issuer: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE
# Serial Number: 623604 (0x983f4)
# Subject: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE
# Not Valid Before: Thu Nov 05 08:50:46 2009
# Not Valid After: Mon Nov 05 08:50:46 2029
# Fingerprint (SHA-256):
EE:C5:49:6B:98:8C:E9:86:25:B9:34:09:2E:EC:29:08:BE:D0:B0:F3:16:C2:D4:73:0C:84:EA:F1:F3:D3:48:81
# Fingerprint (SHA1): 96:C9:1B:0B:95:B4:10:98:42:FA:D0:D8:22:79:FE:60:FA:B9:16:83
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

# Serial Number: 623603 (0x983f3)

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "D-TRUST Root Class 3 CA 2 EV 2009"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \000120\061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060\060\071$ 

**END** 

CKA ID UTF8 "0"

#### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000120\061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014\104\104\055\124\122\125\123\124\040\122\157\157\164\040\103\154\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060\060\071$$ 

**END** 

CKA SERIAL NUMBER MULTILINE OCTAL

\002\003\011\203\364

**END** 

#### CKA VALUE MULTILINE OCTAL

\060\202\004\103\060\202\003\053\240\003\002\001\002\002\003\011 \203\364\060\015\006\011\052\206\110\206\367\015\001\001\013\005 \000\060\120\061\013\060\011\006\003\125\004\006\023\002\104\105 \163\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003 \014\041\104\055\124\122\125\123\124\040\122\157\157\164\040\103  $\label{eq:condition} $$ \frac{154}{141}\frac{3}{163}\frac{040}{063}\frac{103}{103}\frac{040}{062}\frac{040}{105}\frac{126}{040}\frac{062}{062}$$ \060\060\071\060\036\027\015\060\071\061\061\060\065\060\070\065 \060\064\066\132\027\015\062\071\061\061\060\065\060\070\065\060 \064\066\132\060\120\061\013\060\011\006\003\125\004\006\023\002 \104\105\061\025\060\023\006\003\125\004\012\014\014\104\055\124 \162\165\163\164\040\107\155\142\110\061\052\060\050\006\003\125 \004\003\014\041\104\055\124\122\125\123\124\040\122\157\157\164 \040\103\154\141\163\163\040\063\040\103\101\040\062\040\105\126  $\label{eq:condition} $$ \040\062\060\071\060\202\001\042\060\015\006\011\052\206\110 $$$ \206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001 \012\002\202\001\001\000\231\361\204\064\160\272\057\267\060\240 \216\275\174\004\317\276\142\274\231\375\202\227\322\172\012\147 \226\070\011\366\020\116\225\042\163\231\215\332\025\055\347\005 \374\031\163\042\267\216\230\000\274\074\075\254\241\154\373\326 \171\045\113\255\360\314\144\332\210\076\051\270\017\011\323\064 \335\063\365\142\321\341\315\031\351\356\030\117\114\130\256\342 \036\326\014\133\025\132\330\072\270\304\030\144\036\343\063\262 \265\211\167\116\014\277\331\224\153\023\227\157\022\243\376\231

\251\004\314\025\354\140\150\066\355\010\173\267\365\277\223\355 \146\061\203\214\306\161\064\207\116\027\352\257\213\221\215\034 \126\101\256\042\067\136\067\362\035\331\321\055\015\057\151\121 \247\276\146\246\212\072\052\275\307\032\261\341\024\360\276\072 \035\271\317\133\261\152\376\264\261\106\040\242\373\036\073\160 \357\223\230\175\214\163\226\362\305\357\205\160\255\051\046\374 \036\004\076\034\240\330\017\313\122\203\142\174\356\213\123\225 \220\251\127\242\352\141\005\330\371\115\304\047\372\156\255\355 \371\327\121\367\153\245\002\003\001\000\001\243\202\001\044\060 \202\001\040\060\017\006\003\125\035\023\001\001\377\004\005\060  $\label{eq:condition} $$ \003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\323 $$$  $\label{eq:condition} $$ \224\212\114\142\023\052\031\056\314\257\162\212\175\066\327\232$ \034\334\147\060\016\006\003\125\035\017\001\001\377\004\004\003  $\label{eq:condition} $$ \002\001\006\060\201\335\006\003\125\035\037\004\201\325\060\201 $$$  $\label{eq:condition} $$ 322\060\201\207\240\201\204\240\201\201\206\177\154\144\141\160 $$$ \072\057\057\144\151\162\145\143\164\157\162\171\056\144\055\164 \125\123\124\045\062\060\122\157\157\164\045\062\060\103\154\141 \163\163\045\062\060\063\045\062\060\103\101\045\062\060\062\045  $\label{eq:condition} $$ \062\060\105\126\045\062\060\062\060\060\071\054\117\075\104\055$$$ \124\162\165\163\164\045\062\060\107\155\142\110\054\103\075\104 \105\077\143\145\162\164\151\146\151\143\141\164\145\162\145\166  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \102\206\100\150\164\164\160\072\057\057\167\167\167\056\144\055 \164\162\165\163\164\056\156\145\164\057\143\162\154\057\144\055 \164\162\165\163\164\137\162\157\157\164\137\143\154\141\163\163 \137\063\137\143\141\137\062\137\145\166\137\062\060\060\071\056 \005\000\003\202\001\001\000\064\355\173\132\074\244\224\210\357 \032\021\165\007\057\263\376\074\372\036\121\046\353\207\366\051 \032\376\006\121\246\025\244\055\357\262\113\277\040\050\045\111 \321\246\066\167\064\350\144\337\122\261\021\307\163\172\315\071 \236\302\255\214\161\041\362\132\153\257\337\074\116\125\257\262 \204\145\024\211\271\167\313\052\061\276\317\243\155\317\157\110 \224\062\106\157\347\161\214\240\246\204\031\067\007\362\003\105 \011\053\206\165\174\337\137\151\127\000\333\156\330\246\162\042 \113\120\324\165\230\126\337\267\030\377\103\103\120\256\172\104  $\label{eq:condition} $$ \frac{173\360\171\121\327\103\075\247\323\201\323\360\311\117\271\332}{117\271\332} $$$ \306\227\206\320\202\303\344\102\155\376\260\342\144\116\016\046 \347\100\064\046\265\010\211\327\010\143\143\070\047\165\036\063 \352\156\250\335\237\231\117\164\115\201\211\200\113\335\232\227 \051\134\057\276\201\101\271\214\377\352\175\140\006\236\315\327 \075\323\056\243\025\274\250\346\046\345\157\303\334\270\003\041 \352\237\026\361\054\124\265

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "D-TRUST Root Class 3 CA 2 EV 2009"
# Issuer: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE
# Serial Number: 623604 (0x983f4)
# Subject: CN=D-TRUST Root Class 3 CA 2 EV 2009,O=D-Trust GmbH,C=DE
# Not Valid Before: Thu Nov 05 08:50:46 2009
# Not Valid After: Mon Nov 05 08:50:46 2029
# Fingerprint (SHA-256):
EE:C5:49:6B:98:8C:E9:86:25:B9:34:09:2E:EC:29:08:BE:D0:B0:F3:16:C2:D4:73:0C:84:EA:F1:F3:D3:48:81
# Fingerprint (SHA1): 96:C9:1B:0B:95:B4:10:98:42:FA:D0:D8:22:79:FE:60:FA:B9:16:83
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "D-TRUST Root Class 3 CA 2 EV 2009"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\226\311\033\013\225\264\020\230\102\372\320\330\042\171\376\140
\372\271\026\203
END
CKA CERT MD5 HASH MULTILINE OCTAL
\252\306\103\054\136\055\315\304\064\300\120\117\021\002\117\266
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\120\061\013\060\011\006\003\125\004\006\023\002\104\105\061 $$
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\052\060\050\006\003\125\004\003\014
\\ \\ 041\\104\\055\\124\\122\\125\\123\\124\\040\\122\\157\\157\\164\\040\\103\\154
\141\163\163\040\063\040\103\101\040\062\040\105\126\040\062\060
\060\071
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\003\011\203\364
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "CA Disig Root R2"
# Issuer: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK
# Serial Number:00:92:b8:88:db:b0:8a:c1:63
# Subject: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK
# Not Valid Before: Thu Jul 19 09:15:30 2012
# Not Valid After: Sat Jul 19 09:15:30 2042
# Fingerprint (SHA-256):
```

E2:3D:4A:03:6D:7B:70:E9:F5:95:B1:42:20:79:D2:B9:1E:DF:BB:1F:B6:51:A0:63:3E:AA:8A:9D:C5:F8:07:03 # Fingerprint (SHA1): B5:61:EB:EA:A4:DE:E4:25:4B:69:1A:98:A5:57:47:C2:34:C7:D9:71

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "CA Disig Root R2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \000122\061\013\060\011\006\003\125\004\0006\023\002\123\113\061 $$ \023\060\021\006\003\125\004\012\162\141\164\151\163 $$ \154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104 $$ \151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125 $$ \004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157 $$ \164\040\122\062$$ 

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000122\061\013\060\011\006\003\125\004\0006\023\002\123\113\061 $$ \023\060\021\006\003\125\004\012\162\141\164\151\163 $$ \154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104 $$ \151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125 $$ \004\003\023\020\103\101\040\104\151\163\151\147\040\122\157\157 $$ \164\040\122\062$$ 

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

\002\011\000\222\270\210\333\260\212\301\143

**END** 

#### CKA VALUE MULTILINE OCTAL

\060\202\005\151\060\202\003\121\240\003\002\001\002\002\011\000  $\label{eq:condition} $$ \222\270\210\333\260\212\301\143\060\015\006\011\052\206\110\206$ \367\015\001\001\013\005\000\060\122\061\013\060\011\006\003\125 \004\006\023\002\123\113\061\023\060\021\006\003\125\004\007\023 \012\102\162\141\164\151\163\154\141\166\141\061\023\060\021\006  $\label{eq:condition} $$ \003\125\004\012\023\012\104\151\163\151\147\040\141\056\163\056$$ \061\031\060\027\006\003\125\004\003\023\020\103\101\040\104\151 \163\151\147\040\122\157\157\164\040\122\062\060\036\027\015\061 \062\060\067\061\071\060\071\061\065\063\060\132\027\015\064\062  $\label{eq:condition} $$ \060\067\061\071\060\071\061\065\063\060\132\060\122\061\013\060 $$$ \125\004\007\023\012\102\162\141\164\151\163\154\141\166\141\061  $\label{eq:condition} $$ \023\060\021\006\003\125\004\012\023\012\104\151\163\151\147\040 $$$ \141\056\163\056\061\031\060\027\006\003\125\004\003\023\020\103 \101\040\104\151\163\151\147\040\122\157\157\164\040\122\062\060 \202\002\042\060\015\006\011\052\206\110\206\367\015\001\001\001 \005\000\003\202\002\017\000\060\202\002\012\002\202\002\001\000 \242\243\304\000\011\326\205\135\055\155\024\366\302\303\163\236 \065\302\161\125\176\201\373\253\106\120\340\301\174\111\170\346

\253\171\130\074\332\377\174\034\237\330\227\002\170\076\153\101 \004\351\101\275\276\003\054\105\366\057\144\324\253\135\243\107 \075\144\233\351\150\232\306\314\033\077\272\276\262\213\064\002 \056\230\125\031\374\214\157\252\137\332\114\316\115\003\041\243 \330\322\064\223\126\226\313\114\014\000\026\074\137\032\315\310 \307\154\246\255\323\061\247\274\350\345\341\146\326\322\373\003 \264\101\145\311\020\256\016\005\143\306\200\152\151\060\375\322 \356\220\357\015\047\337\237\225\163\364\341\045\332\154\026\336 \101\070\064\352\213\374\321\350\004\024\141\055\101\176\254\307 \167\116\313\121\124\373\136\222\030\033\004\132\150\306\311\304 \372\267\023\240\230\267\021\053\267\326\127\314\174\236\027\321  $\label{eq:condition} $$ 313\045\376\206\116\044\056\126\014\170\115\236\001\022\246\053$ \247\001\145\156\174\142\035\204\204\337\352\300\153\265\245\052 \225\203\303\123\021\014\163\035\013\262\106\220\321\102\072\316  $\label{eq:condition} $$ 100\156\225\255\377\306\224\255\156\227\204\216\175\157\236\212$ \200\015\111\155\163\342\173\222\036\303\363\301\363\353\056\005 \157\331\033\317\067\166\004\310\264\132\344\027\247\313\335\166 \037\320\031\166\350\054\005\263\326\234\064\330\226\334\141\207 \221\005\344\104\010\063\301\332\271\010\145\324\256\262\066\015 \353\272\070\272\014\345\233\236\353\215\146\335\231\317\326\211 \101\366\004\222\212\051\051\155\153\072\034\347\165\175\002\161 \016\363\300\347\275\313\031\335\235\140\262\302\146\140\266\261  $\label{eq:condition} $$ \004\356\311\346\206\271\232\146\100\250\347\021\355\201\105\003$ \213\366\147\131\350\301\006\021\275\335\317\200\002\117\145\100 \170\134\107\120\310\233\346\037\201\173\344\104\250\133\205\232 \342\336\132\325\307\371\072\104\146\113\344\062\124\174\344\154 \234\263\016\075\027\242\262\064\022\326\176\262\250\111\273\321 \172\050\100\276\242\026\037\337\344\067\037\021\163\373\220\012 \145\103\242\015\174\370\006\001\125\063\175\260\015\270\364\365 \256\245\102\127\174\066\021\214\173\136\304\003\235\214\171\235  $\label{eq:condition} $$ \002\003\001\000\001\243\102\060\100\060\017\006\003\125\035\023$ \001\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035 \017\001\001\377\004\004\003\002\001\006\060\035\006\003\125\035 \016\004\026\004\024\265\231\370\257\260\224\365\343\040\326\012 \255\316\116\126\244\056\156\102\355\060\015\006\011\052\206\110 \206\367\015\001\001\013\005\000\003\202\002\001\000\046\006\136 \160\347\145\063\310\202\156\331\234\027\072\033\172\146\262\001  $\label{eq:condition} $$ \366\170\073\151\136\057\352\377\116\371\050\303\230\052\141\114$ \264\044\022\212\175\155\021\024\367\234\265\312\346\274\236\047 \216\114\031\310\251\275\172\300\327\066\016\155\205\162\156\250 \306\242\155\366\372\163\143\177\274\156\171\010\034\235\212\237 \032\212\123\246\330\273\331\065\125\261\021\305\251\003\263\126 \073\271\204\223\042\136\176\301\366\022\122\213\352\054\147\274 \376\066\114\365\270\317\321\263\111\222\073\323\051\016\231\033 \226\367\141\270\073\304\053\266\170\154\264\043\157\360\375\323 \262\136\165\037\231\225\250\254\366\332\341\305\061\173\373\321 \106\263\322\274\147\264\142\124\272\011\367\143\260\223\242\232 \371\351\122\056\213\140\022\253\374\365\140\126\357\020\134\213

\304\032\102\334\203\133\144\016\313\265\274\326\117\301\174\074 \156\215\023\155\373\173\353\060\320\334\115\257\305\325\266\245 \114\133\161\311\350\061\276\350\070\006\110\241\032\342\352\322 \336\022\071\130\032\377\200\016\202\165\346\267\311\007\154\016  $\label{eq:condition} $$ \frac{357}{377}070\\ 361\\ 230\\ 161\\ 304\\ 267\\ 177\\ 016\\ 025\\ 320\\ 045\\ 151\\ 275\\ 042$ \235\053\355\005\366\106\107\254\355\300\360\324\073\342\354\356 \226\133\220\023\116\036\126\072\353\260\357\226\273\226\043\021 \272\362\103\206\164\144\225\310\050\165\337\035\065\272\322\067 \203\070\123\070\066\073\317\154\351\371\153\016\320\373\004\350  $\117\167\327\145\001\170\206\014\172\076\041\142\361\177\143\161$  $\label{eq:condition} $$ \014\311\237\104\333\250\047\242\165\276\156\201\076\327\300\353$  $\label{eq:condition} $$ \033\230\017\160\134\064\262\212\314\300\205\030\353\156\172\263$ \367\132\241\007\277\251\102\222\363\140\042\227\344\024\241\007 \233\116\166\300\216\175\375\244\045\307\107\355\377\037\163\254 \314\303\245\351\157\012\216\233\145\302\120\205\265\243\240\123 \022\314\125\207\141\363\201\256\020\106\141\275\104\041\270\302 \075\164\317\176\044\065\372\034\007\016\233\075\042\312\357\061 \057\214\254\022\275\357\100\050\374\051\147\237\262\023\117\146  $\\ \langle 044 \rangle 304 \rangle 123 \rangle 031 \rangle 351 \rangle 036 \rangle 051 \rangle 025 \rangle 357 \rangle 346 \rangle 155 \rangle 260 \rangle 177 \rangle 055 \rangle 147 \rangle 375$ \363\154\033\165\106\243\345\112\027\351\244\327\013 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "CA Disig Root R2"
```

E2:3D:4A:03:6D:7B:70:E9:F5:95:B1:42:20:79:D2:B9:1E:DF:BB:1F:B6:51:A0:63:3E:AA:8A:9D:C5:F8:07:03

# Fingerprint (SHA1): B5:61:EB:EA:A4:DE:E4:25:4B:69:1A:98:A5:57:47:C2:34:C7:D9:71

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "CA Disig Root R2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\265\141\353\352\244\336\344\045\113\151\032\230\245\127\107\302

 $\langle 064 \rangle 307 \rangle 331 \rangle 161$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\046\001\373\330\047\247\027\232\105\124\070\032\103\001\073\003

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\122\061\013\060\011\006\003\125\004\006\023\002\123\113\061 $$$ 

<sup>#</sup> Issuer: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK

<sup>#</sup> Serial Number:00:92:b8:88:db:b0:8a:c1:63

<sup>#</sup> Subject: CN=CA Disig Root R2,O=Disig a.s.,L=Bratislava,C=SK

<sup>#</sup> Not Valid Before: Thu Jul 19 09:15:30 2012

<sup>#</sup> Not Valid After: Sat Jul 19 09:15:30 2042

<sup>#</sup> Fingerprint (SHA-256):

\023\060\021\006\003\125\004\007\023\012\102\162\141\164\151\163 \154\141\166\141\061\023\060\021\006\003\125\004\012\023\012\104 \151\163\151\147\040\141\056\163\056\061\031\060\027\006\003\125  $\\ \\004\\ \\003\\ \\023\\ \\020\\ \\103\\ \\101\\ \\040\\ \\104\\ \\104\\ \\151\\ \\163\\ \\151\\ \\147\\ \\040\\ \\122\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\157\\ \\1$ \164\040\122\062 **END** CKA SERIAL NUMBER MULTILINE OCTAL \002\011\000\222\270\210\333\260\212\301\143 **END** CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE # # Certificate "ACCVRAIZ1" # Issuer: C=ES.O=ACCV.OU=PKIACCV.CN=ACCVRAIZ1 # Serial Number:5e:c3:b7:a6:43:7f:a4:e0 # Subject: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1 # Not Valid Before: Thu May 05 09:37:37 2011 # Not Valid After: Tue Dec 31 09:37:37 2030 # Fingerprint (SHA-256): 9A:6E:C0:12:E1:A7:DA:9D:BE:34:19:4D:47:8A:D7:C0:DB:18:22:FB:07:1D:F1:29:81:49:6E:D1:04:38:41:13 # Fingerprint (SHA1): 93:05:7A:88:15:C6:4F:CE:88:2F:FA:91:16:52:28:78:BC:53:64:17 CKA CLASS CK OBJECT CLASS CKO CERTIFICATE CKA TOKEN CK BBOOL CK TRUE CKA\_PRIVATE CK\_BBOOL CK\_FALSE CKA MODIFIABLE CK BBOOL CK FALSE CKA LABEL UTF8 "ACCVRAIZ1" CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA SUBJECT MULTILINE OCTAL \060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103 \126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014 \007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004 \012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006 \023\002\105\123 **END** CKA ID UTF8 "0" CKA\_ISSUER MULTILINE\_OCTAL \060\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103 \126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014 \007\120\113\111\101\103\103\126\061\015\060\013\006\003\125\004 \012\014\004\101\103\103\126\061\013\060\011\006\003\125\004\006

END

\023\002\105\123

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\136\303\267\246\103\177\244\340

#### **END**

#### CKA VALUE MULTILINE OCTAL

\060\202\007\323\060\202\005\273\240\003\002\001\002\002\010\136 \303\267\246\103\177\244\340\060\015\006\011\052\206\110\206\367 \015\001\001\005\005\000\060\102\061\022\060\020\006\003\125\004 \006\003\125\004\013\014\007\120\113\111\101\103\103\126\061\015 \060\013\006\003\125\004\012\014\004\101\103\103\126\061\013\060 \011\006\003\125\004\006\023\002\105\123\060\036\027\015\061\061 \060\065\060\065\060\071\063\067\063\067\132\027\015\063\060\061 \062\063\061\060\071\063\067\063\067\132\060\102\061\022\060\020 \061\020\060\016\006\003\125\004\013\014\007\120\113\111\101\103 \103\126\061\015\060\013\006\003\125\004\012\014\004\101\103\103 \126\061\013\060\011\006\003\125\004\006\023\002\105\123\060\202 \002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  $\label{eq:condition} $$ \000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\233 $$$ \251\253\277\141\112\227\257\057\227\146\232\164\137\320\331\226 \375\317\342\344\146\357\037\037\107\063\302\104\243\337\232\336  $\label{eq:condition} $$ \037\265\124\335\025\174\151\065\021\157\273\310\014\216\152\030 $$$ \036\330\217\331\026\274\020\110\066\134\360\143\263\220\132\134 \044\067\327\243\326\313\011\161\271\361\001\162\204\260\175\333  $\label{eq:condition} $$ \frac{315}{374}\frac{323}{157}\frac{311}{370}\frac{322}{66}\frac{202}{322}\frac{205}{250}$$ \033\150\250\075\350\364\104\154\275\241\302\313\003\276\214\076 \023\000\204\337\112\110\300\343\042\012\350\351\067\247\030\114 \261\011\015\043\126\177\004\115\331\027\204\030\245\310\332\100 \224\163\353\316\016\127\074\003\201\072\235\012\241\127\103\151 \254\127\155\171\220\170\345\265\264\073\330\274\114\215\050\241 \247\243\247\272\002\116\045\321\052\256\355\256\003\042\270\153 \040\017\060\050\124\225\177\340\356\316\012\146\235\321\100\055 \156\042\257\235\032\301\005\031\322\157\300\362\237\370\173\263 \002\102\373\120\251\035\055\223\017\043\253\306\301\017\222\377 \320\242\025\365\123\011\161\034\377\105\023\204\346\046\136\370 \340\210\034\012\374\026\266\250\163\006\270\360\143\204\002\240 \306\132\354\347\164\337\160\256\243\203\045\352\326\307\227\207 \223\247\306\212\212\063\227\140\067\020\076\227\076\156\051\025 \326\241\017\321\210\054\022\237\157\252\244\306\102\353\101\242 \343\225\103\323\001\205\155\216\273\073\363\043\066\307\376\073  $\label{eq:condition} $$ 340\241\045\007\110\253\311\211\164\377\010\217\200\277\300\226$$ \145\363\356\354\113\150\275\235\210\303\061\263\100\361\350\317 \366\070\273\234\344\321\177\324\345\130\233\174\372\324\363\016 \233\165\221\344\272\122\056\031\176\321\365\315\132\031\374\272 \006\366\373\122\250\113\231\004\335\370\371\264\213\120\243\116 \142\211\360\207\044\372\203\102\301\207\372\325\055\051\052\132 \161\172\144\152\327\047\140\143\015\333\316\111\365\215\037\220 \211\062\027\370\163\103\270\322\132\223\206\141\326\341\165\012 \352\171\146\166\210\117\161\353\004\045\326\012\132\172\223\345 \271\113\027\100\017\261\266\271\365\336\117\334\340\263\254\073

\021\160\140\204\112\103\156\231\040\300\051\161\012\300\145\002 \003\001\000\001\243\202\002\313\060\202\002\307\060\175\006\010 \053\006\001\005\005\007\001\001\004\161\060\157\060\114\006\010 \053\006\001\005\005\007\060\002\206\100\150\164\164\160\072\057 \057\167\167\167\056\141\143\143\166\056\145\163\057\146\151\154 \145\141\144\155\151\156\057\101\162\143\150\151\166\157\163\057 \143\145\162\164\151\146\151\143\141\144\157\163\057\162\141\151 \172\141\143\143\166\061\056\143\162\164\060\037\006\010\053\006 \001\005\005\007\060\001\206\023\150\164\164\160\072\057\057\157 \143\163\160\056\141\143\143\166\056\145\163\060\035\006\003\125 \035\016\004\026\004\024\322\207\264\343\337\067\047\223\125\366 \126\352\201\345\066\314\214\036\077\275\060\017\006\003\125\035 \023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125  $\label{eq:condition} $$ \035\043\004\030\060\026\200\024\322\207\264\343\337\067\047\223 $$$ \125\366\126\352\201\345\066\314\214\036\077\275\060\202\001\163 \006\003\125\035\040\004\202\001\152\060\202\001\146\060\202\001 \142\006\004\125\035\040\000\060\202\001\130\060\202\001\042\006 \010\053\006\001\005\005\007\002\002\060\202\001\024\036\202\001 \020\000\101\000\165\000\164\000\157\000\162\000\151\000\144\000 \141\000\144\000\040\000\144\000\145\000\040\000\103\000\145\000 \162\000\164\000\151\000\146\000\151\000\143\000\141\000\143\000 \151\000\363\000\156\000\040\000\122\000\141\000\355\000\172\000  $\\ \\ \langle 040 \rangle 000 \rangle 144 \langle 000 \rangle 145 \langle 000 \rangle 040 \langle 000 \rangle 154 \langle 000 \rangle 141 \langle 000 \rangle 040 \langle 000 \rangle 101 \langle 000 \rangle 124 \langle 000 \rangle 141 \langle 000 \rangle 124 \langle 000$ \103\000\103\000\126\000\040\000\050\000\101\000\147\000\145\000 \156\000\143\000\151\000\141\000\040\000\144\000\145\000\040\000 \124\000\145\000\143\000\156\000\157\000\154\000\157\000\147\000 \355\000\141\000\040\000\171\000\040\000\103\000\145\000\162\000 \164\000\151\000\146\000\151\000\143\000\141\000\143\000\151\000 \363\000\156\000\040\000\105\000\154\000\145\000\143\000\164\000 \162\000\363\000\156\000\151\000\143\000\141\000\054\000\040\000  $\label{eq:condition} $$ 103\000\111\000\106\000\040\000\121\000\064\000\066\000\066\000$ \061\000\061\000\065\000\066\000\105\000\051\000\056\000\040\000 \103\000\120\000\123\000\040\000\145\000\156\000\040\000\150\000 \164\000\164\000\160\000\072\000\057\000\057\000\167\000\167\000 \167\000\056\000\141\000\143\000\143\000\166\000\056\000\145\000 \163\060\060\006\010\053\006\001\005\005\007\002\001\026\044\150 \164\164\160\072\057\057\167\167\167\056\141\143\143\166\056\145 \163\057\154\145\147\151\163\154\141\143\151\157\156\137\143\056  $\label{eq:condition} $$ \frac{150}{164}\frac{060}{125}\frac{006}{003}\frac{125}{035}\frac{037}{004}\frac{116}{060}\frac{114}{060}\frac{112}{112} $$$ \240\110\240\106\206\104\150\164\164\160\072\057\057\167\167\167 \056\141\143\143\166\056\145\163\057\146\151\154\145\141\144\155 \151\156\057\101\162\143\150\151\166\157\163\057\143\145\162\164 \151\146\151\143\141\144\157\163\057\162\141\151\172\141\143\143 \166\061\137\144\145\162\056\143\162\154\060\016\006\003\125\035 \021\004\020\060\016\201\014\141\143\143\166\100\141\143\143\166 \056\145\163\060\015\006\011\052\206\110\206\367\015\001\001\005 \005\000\003\202\002\001\000\227\061\002\237\347\375\103\147\110

\104\024\344\051\207\355\114\050\146\320\217\065\332\115\141\267 \112\227\115\265\333\220\340\005\056\016\306\171\320\362\227\151  $\label{eq:condition} $$ \017\275\004\107\331\276\333\265\051\332\233\331\256\251\231\325 $$$ \323\074\060\223\365\215\241\250\374\006\215\104\364\312\026\225 \174\063\334\142\213\250\067\370\047\330\011\055\033\357\310\024  $\\ \\ \langle 047 \rangle 040 \rangle 251 \rangle 144 \rangle 104 \rangle 377 \rangle 056 \rangle 326 \rangle 165 \rangle 252 \rangle 154 \rangle 115 \rangle 140 \rangle 100 \rangle 031 \rangle 1111 \rangle 140 \rangle 140$ \103\124\143\332\342\314\272\146\345\117\104\172\133\331\152\201  $\label{eq:condition} $$ \053\100\325\177\371\001\047\130\054\310\355\110\221\174\077\246$$ \000\317\304\051\163\021\066\336\206\031\076\235\356\031\212\033 \325\260\355\216\075\234\052\300\015\330\075\146\343\074\015\275 \325\224\134\342\342\247\065\033\004\000\366\077\132\215\352\103 \275\137\211\035\251\301\260\314\231\342\115\000\012\332\311\047 \133\347\023\220\134\344\365\063\242\125\155\334\340\011\115\057 \261\046\133\047\165\000\011\304\142\167\051\010\137\236\131\254  $\verb|\| 266\| 176\| 255\| 237\| 124\| 060\| 042\| 003\| 301\| 036\| 161\| 144\| 376\| 371\| 070\| 012$ \226\030\335\002\024\254\043\313\006\034\036\244\175\215\015\336 \047\101\350\255\332\025\267\260\043\335\053\250\323\332\045\207 \355\350\125\104\115\210\364\066\176\204\232\170\254\367\016\126 \111\016\326\063\045\326\204\120\102\154\040\022\035\052\325\276 \274\362\160\201\244\160\140\276\005\265\233\236\004\104\276\141 \043\254\351\245\044\214\021\200\224\132\242\242\271\111\322\301  $\label{eq:condition} $\34\321\247\355\061\021\054\236\031\246\356\341\125\341\300\352$ \317\015\204\344\027\267\242\174\245\336\125\045\006\356\314\300 \207\134\100\332\314\225\077\125\340\065\307\270\204\276\264\135 \315\172\203\001\162\356\207\346\137\035\256\265\205\306\046\337 \346\301\232\351\036\002\107\237\052\250\155\251\133\317\354\105 \167\177\230\047\232\062\135\052\343\204\356\305\230\146\057\226  $\label{eq:condition} $$ \040\035\335\330\303\047\327\260\371\376\331\175\315\320\237\217 $$$ \013\024\130\121\237\057\213\303\070\055\336\350\217\326\215\207 \244\365\126\103\026\231\054\364\244\126\264\064\270\141\067\311  $\label{eq:condition} $$ 302\130\200\033\240\227\241\374\131\215\351\021\366\321\017\113$ \125\064\106\052\213\206\073

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "ACCVRAIZ1"
```

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

<sup>#</sup> Issuer: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1

<sup>#</sup> Serial Number:5e:c3:b7:a6:43:7f:a4:e0

<sup>#</sup> Subject: C=ES,O=ACCV,OU=PKIACCV,CN=ACCVRAIZ1

<sup>#</sup> Not Valid Before: Thu May 05 09:37:37 2011

<sup>#</sup> Not Valid After: Tue Dec 31 09:37:37 2030

<sup>#</sup> Fingerprint (SHA-256):

<sup>9</sup>A:6E:C0:12:E1:A7:DA:9D:BE:34:19:4D:47:8A:D7:C0:DB:18:22:FB:07:1D:F1:29:81:49:6E:D1:04:38:41:13

<sup>#</sup> Fingerprint (SHA1): 93:05:7A:88:15:C6:4F:CE:88:2F:FA:91:16:52:28:78:BC:53:64:17

CKA\_LABEL UTF8 "ACCVRAIZ1" CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL  $\label{eq:condition} $$ \223\005\172\210\025\306\117\316\210\057\372\221\026\122\050\170$ \274\123\144\027 **END** CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL \320\240\132\356\005\266\011\224\041\241\175\361\262\051\202\002 **END** CKA\_ISSUER MULTILINE\_OCTAL  $\label{eq:condition} $$ \000\102\061\022\060\020\006\003\125\004\003\014\011\101\103\103$ \126\122\101\111\132\061\061\020\060\016\006\003\125\004\013\014 \023\002\105\123 **END** CKA SERIAL NUMBER MULTILINE OCTAL \002\010\136\303\267\246\103\177\244\340 **END** CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE # Certificate "TWCA Global Root CA" # Issuer: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW # Serial Number: 3262 (0xcbe) # Subject: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW # Not Valid Before: Wed Jun 27 06:28:33 2012 # Not Valid After: Tue Dec 31 15:59:59 2030 # Fingerprint (SHA-256): 59:76:90:07:F7:68:5D:0F:CD:50:87:2F:9F:95:D5:75:5A:5B:2B:45:7D:81:F3:69:2B:61:0A:98:67:2F:0E:1B # Fingerprint (SHA1): 9C:BB:48:53:F6:A4:F6:D3:52:A4:E8:32:52:55:60:13:F5:AD:AF:65 CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA\_PRIVATE CK\_BBOOL CK\_FALSE CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE CKA\_LABEL UTF8 "TWCA Global Root CA" CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA\_SUBJECT MULTILINE\_OCTAL \060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061 \022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116 \055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157 \157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023 \124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164

CKA\_PRIVATE CK\_BBOOL CK\_FALSE
CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

\040\103\101

**END** 

CKA ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000121\0013\006\0011\006\003\125\004\0006\023\002\124\127\006\002\006\003\125\004\0012\124\101\111\127\101\116\0055\103\101\006\1\002\006\003\125\0004\0013\023\007\122\157\157\164\040\103\101\006\1\034\006\003\2\006\003\125\0004\003\023\023\124\127\103\101\004\107\154\157\142\141\154\004\122\157\157\164\004\0103\101$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\002\014\276

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\101\060\202\003\051\240\003\002\001\002\002\002\014  $\label{eq:condition} $$ \276\06\015\006\011\052\206\110\206\367\015\001\001\013\005\000 $$$ \060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061 \022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116  $\begin{tabular}{l} $$ \begin{tabular}{l} $0.055 \ 1.03 \ 1.01 \ 0.061 \ 0.060 \ 0.016 \ 0.006 \ 0.03 \ 1.25 \ 0.04 \ 0.13 \ 0.023 \ 0.07 \ 1.22 \ 1.57 \ 0.04 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.060 \ 0.06$ \157\164\040\103\101\061\034\060\032\006\003\125\004\003\023\023 \124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164 \070\063\063\132\027\015\063\060\061\062\063\061\061\065\065\071 \065\071\132\060\121\061\013\060\011\006\003\125\004\006\023\002 \124\127\061\022\060\020\006\003\125\004\012\023\011\124\101\111 \127\101\116\055\103\101\061\020\060\016\006\003\125\004\013\023 \007\122\157\157\164\040\103\101\061\034\060\032\006\003\125\004 \003\023\023\124\127\103\101\040\107\154\157\142\141\154\040\122 \157\157\164\040\103\101\060\202\002\042\060\015\006\011\052\206 \110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202 \002\012\002\202\002\001\000\260\005\333\310\353\214\304\156\212 \041\357\216\115\234\161\012\037\122\160\355\155\202\234\227\305 \327\114\116\105\111\313\100\102\265\022\064\154\031\302\164\244 \061\137\205\002\227\354\103\063\012\123\322\234\214\216\267\270 \171\333\053\325\152\362\216\146\304\356\053\001\007\222\324\263 \320\002\337\120\366\125\257\146\016\313\340\107\140\057\053\062  $\label{eq:condition} $$ \071\065\122\072\050\203\370\173\026\306\030\270\142\326\107\045 $$$ \221\316\360\031\022\115\255\143\365\323\077\165\137\051\360\241 \060\034\052\240\230\246\025\275\356\375\031\066\360\342\221\103 \217\372\312\326\020\047\111\114\357\335\301\361\205\160\233\312 \352\250\132\103\374\155\206\157\163\351\067\105\251\360\066\307 \314\210\165\036\273\154\006\377\233\153\076\027\354\141\252\161 \174\306\035\242\367\111\351\025\265\074\326\241\141\365\021\367 \005\157\035\375\021\276\320\060\007\302\051\260\011\116\046\334 \343\242\250\221\152\037\302\221\105\210\134\345\230\270\161\245 \025\031\311\174\165\021\314\160\164\117\055\233\035\221\104\375 \126\050\240\376\273\206\152\310\372\134\013\130\334\306\113\166

\310\253\042\331\163\017\245\364\132\002\211\077\117\236\042\202 \356\242\164\123\052\075\123\047\151\035\154\216\062\054\144\000 \046\143\141\066\116\243\106\267\077\175\263\055\254\155\220\242 \225\242\316\317\332\202\347\007\064\031\226\351\270\041\252\051 \176\246\070\276\216\051\112\041\146\171\037\263\303\265\011\147 \336\326\324\007\106\363\052\332\346\042\067\140\313\201\266\017 \240\017\351\310\225\177\277\125\221\005\172\317\075\025\300\157 \336\011\224\001\203\327\064\033\314\100\245\360\270\233\147\325 \230\221\073\247\204\170\225\046\244\132\010\370\053\164\264\000 \004\074\337\270\024\216\350\337\251\215\154\147\222\063\035\300  $\label{eq:condition} $$ \267\322\354\222\310\276\011\277\054\051\005\157\002\153\236\357$$  $\label{eq:condition} $$ \274\277\052\274\133\300\120\217\101\160\161\207\262\115\267\004$$ \251\204\243\062\257\256\356\153\027\213\262\261\376\154\341\220  $\label{eq:condition} $$ \frac{214}{210}\frac{250}{227}\frac{316}{310}\frac{310}{115}\frac{333}{363}\frac{363}{006}\frac{317}{137}\frac{152}{012}\frac{102}{102} $$$ \261\036\036\167\057\216\240\346\222\016\006\374\005\042\322\046 \341\061\121\175\062\334\017\002\003\001\000\001\243\043\060\041 \060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001 \377\060\015\006\011\052\206\110\206\367\015\001\001\013\005\000  $\label{eq:condition} $$ \003\202\002\001\000\137\064\201\166\357\226\035\325\345\265\331 $$$ \002\143\204\026\301\256\240\160\121\247\367\114\107\065\310\013 \327\050\075\211\161\331\252\063\101\352\024\033\154\041\000\300  $\label{eq:condition} $$ \frac{154\\102\\031\\176\\237\\151\\133\\040\\102\\337\\242\\322\\332\\304\\174\\227$ \113\215\260\350\254\310\356\245\151\004\231\012\222\246\253\047 \056\032\115\201\277\204\324\160\036\255\107\376\375\112\235\063 \340\362\271\304\105\010\041\012\332\151\151\163\162\015\276\064 \376\224\213\255\303\036\065\327\242\203\357\345\070\307\245\205  $\label{eq:condition} $$ \037\253\317\064\354\077\050\376\014\361\127\206\116\311\125\367$ \034\324\330\245\175\006\172\157\325\337\020\337\201\116\041\145 \261\266\341\027\171\225\105\006\316\137\314\334\106\211\143\150  $\label{eq:condition} $$ 104\215\223\364\144\160\240\075\235\050\005\303\071\160\270\142 $$$ \173\040\375\344\333\351\010\241\270\236\075\011\307\117\373\054 \370\223\166\101\336\122\340\341\127\322\235\003\274\167\236\376 \236\051\136\367\301\121\140\037\336\332\013\262\055\165\267\103 \110\223\347\366\171\306\204\135\200\131\140\224\374\170\230\217 \074\223\121\355\100\220\007\337\144\143\044\313\116\161\005\241 \327\224\032\210\062\361\042\164\042\256\245\246\330\022\151\114 \140\243\002\356\053\354\324\143\222\013\136\276\057\166\153\243  $\label{eq:condition} $$ \266\046\274\217\003\330\012\362\114\144\106\275\071\142\345\226 $$$ \353\064\143\021\050\314\225\361\255\357\357\334\200\130\110\351 \113\270\352\145\254\351\374\200\265\265\310\105\371\254\301\237 \331\271\352\142\210\216\304\361\113\203\022\255\346\213\204\326 \236\302\353\203\030\237\152\273\033\044\140\063\160\314\354\367 \062\363\134\331\171\175\357\236\244\376\311\043\303\044\356\025 \222\261\075\221\117\046\206\275\146\163\044\023\352\244\256\143 \301\255\175\204\003\074\020\170\206\033\171\343\304\363\362\004 \225\040\256\043\202\304\263\072\000\142\277\346\066\044\341\127 \272\307\036\220\165\325\137\077\225\141\053\301\073\315\345\263

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TWCA Global Root CA"

# Issuer: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

# Serial Number: 3262 (0xcbe)

# Subject: CN=TWCA Global Root CA,OU=Root CA,O=TAIWAN-CA,C=TW

# Not Valid Before: Wed Jun 27 06:28:33 2012 # Not Valid After : Tue Dec 31 15:59:59 2030

# Fingerprint (SHA-256):

59:76:90:07:F7:68:5D:0F:CD:50:87:2F:9F:95:D5:75:5A:5B:2B:45:7D:81:F3:69:2B:61:0A:98:67:2F:0E:1B

# Fingerprint (SHA1): 9C:BB:48:53:F6:A4:F6:D3:52:A4:E8:32:52:55:60:13:F5:AD:AF:65

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TWCA Global Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\234\273\110\123\366\244\366\323\122\244\350\062\122\125\140\023

 $\ \ \, \backslash 365 \backslash 255 \backslash 257 \backslash 145$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \frac{371}003\\176\\317\\346\\236\\074\\163\\172\\052\\220\\007\\151\\377\\053\\226$ 

END

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\121\061\013\060\011\006\003\125\004\006\023\002\124\127\061\$ 

 $\label{eq:condition} $$ \022\060\020\006\003\125\004\012\023\011\124\101\111\127\101\116$ 

\055\103\101\061\020\060\016\006\003\125\004\013\023\007\122\157

 $\label{eq:condition} $$ \frac{157}{164}040\\103\\101\\061\\034\\060\\032\\006\\003\\125\\004\\003\\023\\023$ 

\124\127\103\101\040\107\154\157\142\141\154\040\122\157\157\164

\040\103\101

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\02\014\276$$ 

**END** 

 ${\tt CKA\_TRUST\_SERVER\_AUTH\ CK\_TRUST\ CKT\_NSS\_TRUSTED\_DELEGATOR}$ 

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

 ${\tt CKA\_TRUST\_STEP\_UP\_APPROVED\ CK\_BBOOL\ CK\_FALSE}$ 

#

# Certificate "TeliaSonera Root CA v1"

- # Issuer: CN=TeliaSonera Root CA v1,O=TeliaSonera
- # Serial Number:00:95:be:16:a0:f7:2e:46:f1:7b:39:82:72:fa:8b:cd:96
- # Subject: CN=TeliaSonera Root CA v1,O=TeliaSonera
- # Not Valid Before: Thu Oct 18 12:00:50 2007
- # Not Valid After: Mon Oct 18 12:00:50 2032
- # Fingerprint (SHA-256):

DD:69:36:FE:21:F8:F0:77:C1:23:A1:A5:21:C1:22:24:F7:22:55:B7:3E:03:A7:26:06:93:E8:A2:4B:0F:A3:89

# Fingerprint (SHA1): 43:13:BB:96:F1:D5:86:9B:C1:4E:6A:92:F6:CF:F6:34:69:87:82:37

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "TeliaSonera Root CA v1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154$$$ 

\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004

\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122

\157\157\164\040\103\101\040\166\061

**END** 

CKA ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154

\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004

 $\\ \begin{tabular}{l} $003 \ 014 \ 026 \ 124 \ 145 \ 154 \ 151 \ 141 \ 123 \ 157 \ 156 \ 145 \ 162 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 040 \ 122 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \ 141 \$ 

\157\157\164\040\103\101\040\166\061

**END** 

CKA SERIAL NUMBER MULTILINE OCTAL

\002\021\000\225\276\026\240\367\056\106\361\173\071\202\162\372 \213\315\226

END

CKA VALUE MULTILINE OCTAL

\125\026\221\134\375\357\041\277\123\200\172\055\322\221\214\143 \061\360\354\044\360\303\245\322\162\174\020\155\364\067\267\345 \346\174\171\352\214\265\202\213\256\110\266\254\000\334\145\165 \354\052\115\137\301\207\365\040\145\053\201\250\107\076\211\043 \225\060\026\220\177\350\127\007\110\347\031\256\277\105\147\261  $\label{eq:condition} $$ \067\033\006\052\376\336\371\254\175\203\373\136\272\344\217\227 $$$ \147\276\113\216\215\144\007\127\070\125\151\064\066\075\023\110 \357\117\342\323\146\036\244\317\032\267\136\066\063\324\264\006 \275\030\001\375\167\204\120\000\105\365\214\135\350\043\274\176 \376\065\341\355\120\173\251\060\215\031\323\011\216\150\147\135 \277\074\227\030\123\273\051\142\305\312\136\162\301\307\226\324 \333\055\240\264\037\151\003\354\352\342\120\361\014\074\360\254 \363\123\055\360\034\365\355\154\071\071\163\200\026\310\122\260  $\label{eq:condition} $$ \043\315\340\076\334\335\074\107\240\273\065\212\342\230\150\213$ \276\345\277\162\356\322\372\245\355\022\355\374\230\030\251\046 \166\334\050\113\020\040\034\323\177\026\167\055\355\157\200\367  $\label{eq:condition} $$ \frac{111}273\frac{005}273\frac{35}{150}\frac{307}{324}\frac{10}{165}\frac{026}{077}\frac{11}{132}\frac{213}{213}$ \367\027\107\324\114\361\322\211\171\076\115\075\230\250\141\336 \072\036\322\370\136\003\340\301\311\034\214\323\215\115\323\225  $\label{eq:condition} $$ \066\263\067\137\143\143\233\063\024\360\055\046\153\123\174\211 $$$ \214\062\302\156\354\075\041\000\071\311\241\150\342\120\203\056 \260\072\053\363\066\240\254\057\344\157\141\302\121\011\071\076 \213\123\271\273\147\332\334\123\271\166\131\066\235\103\345\040 \340\075\062\140\205\042\121\267\307\063\273\335\025\057\244\170 \246\007\173\201\106\066\004\206\335\171\065\307\225\054\073\260 \243\027\065\345\163\037\264\134\131\357\332\352\020\145\173\172 \320\177\237\263\264\052\067\073\160\213\233\133\271\053\267\354  $\label{eq:condition} $$ \262\121\022\227\123\051\132\324\360\022\020\334\117\002\273\022$ \222\057\142\324\077\151\103\174\015\326\374\130\165\001\210\235 \130\026\113\336\272\220\377\107\001\211\006\152\366\137\262\220  $\label{eq:condition} $$ \frac{331}{325}\frac{372}{150}170 $$ \065\115\002\003\001\000\001\243\077\060\075\060\017\006\003\125 \035\023\001\001\377\004\005\060\003\001\001\377\060\013\006\003 \125\035\017\004\004\003\002\001\006\060\035\006\003\125\035\016 \004\026\004\024\360\217\131\070\000\263\365\217\232\226\014\325 \353\372\173\252\027\350\023\022\060\015\006\011\052\206\110\206 \367\015\001\001\005\005\000\003\202\002\001\000\276\344\134\142 \116\044\364\014\010\377\360\323\014\150\344\223\111\042\077\104 \047\157\273\155\336\203\146\316\250\314\015\374\365\232\006\345 \167\024\221\353\235\101\173\231\052\204\345\377\374\041\301\135 \360\344\037\127\267\165\251\241\137\002\046\377\327\307\367\116 \336\117\370\367\034\106\300\172\117\100\054\042\065\360\031\261 \320\153\147\054\260\250\340\300\100\067\065\366\204\134\134\343 \257\102\170\376\247\311\015\120\352\015\204\166\366\121\357\203 \123\306\172\377\016\126\111\056\217\172\326\014\346\047\124\343 \115\012\140\162\142\315\221\007\326\245\277\310\231\153\355\304 \031\346\253\114\021\070\305\157\061\342\156\111\310\077\166\200 \046\003\046\051\340\066\366\366\040\123\343\027\160\064\027\235

\143\150\036\153\354\303\115\206\270\023\060\057\135\106\015\107 \103\325\033\252\131\016\271\134\215\006\110\255\164\207\137\307  $\label{eq:condition} $$ 374 \cdot 061 \cdot 124 \cdot 101 \cdot 023 \cdot 342 \cdot 307 \cdot 041 \cdot 016 \cdot 236 \cdot 340 \cdot 036 \cdot 015 \cdot 341 \cdot 300 \cdot 173$ \103\205\220\305\212\130\306\145\012\170\127\362\306\043\017\001  $\label{eq:condition} $$ 331\040\113\336\017\373\222\205\165\052\134\163\215\155\173\045 $$$ \221\312\356\105\256\006\113\000\314\323\261\131\120\332\072\210 \073\051\103\106\136\227\053\124\316\123\157\215\112\347\226\372 \277\161\016\102\213\174\375\050\240\320\110\312\332\304\201\114 \273\242\163\223\046\310\353\014\326\046\210\266\300\044\317\273 \275\133\353\165\175\351\010\216\206\063\054\171\167\011\151\245 \211\374\263\160\220\207\166\217\323\042\273\102\316\275\163\013  $\label{eq:condition} $$ \040\046\052\320\233\075\160\036\044\154\315\207\166\251\027\226$$ \267\317\015\222\373\216\030\251\230\111\321\236\376\140\104\162  $\label{eq:condition} $$ \041\271\031\355\302\365\061\361\071\110\210\220\044\165\124\026$ \255\316\364\370\151\024\144\071\373\243\270\272\160\100\307\047 \034\277\304\126\123\372\143\145\320\363\034\016\026\365\153\206 \130\115\030\324\344\015\216\245\235\133\221\334\166\044\120\077 \306\052\373\331\267\234\265\326\346\320\331\350\031\213\025\161 \110\255\267\352\330\131\210\324\220\277\026\263\331\351\254\131  $\label{eq:condition} $$ \frac{141}124\310\034\272\312\301\312\341\271\040\114\217\072\223\211}{271} $$$ \245\240\314\277\323\366\165\244\165\226\155\126

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "TeliaSonera Root CA v1"
```

# Issuer: CN=TeliaSonera Root CA v1,O=TeliaSonera

# Serial Number:00:95:be:16:a0:f7:2e:46:f1:7b:39:82:72:fa:8b:cd:96

# Subject: CN=TeliaSonera Root CA v1,O=TeliaSonera

# Not Valid Before: Thu Oct 18 12:00:50 2007

# Not Valid After: Mon Oct 18 12:00:50 2032

# Fingerprint (SHA-256):

DD:69:36:FE:21:F8:F0:77:C1:23:A1:A5:21:C1:22:24:F7:22:55:B7:3E:03:A7:26:06:93:E8:A2:4B:0F:A3:89

# Fingerprint (SHA1): 43:13:BB:96:F1:D5:86:9B:C1:4E:6A:92:F6:CF:F6:34:69:87:82:37

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TeliaSonera Root CA v1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\103\023\273\226\361\325\206\233\301\116\152\222\366\317\366\064 \151\207\202\067

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\067\101\111\033\030\126\232\046\365\255\302\146\373\100\245\114

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\067\061\024\060\022\006\003\125\004\012\014\013\124\145\154
\151\141\123\157\156\145\162\141\061\037\060\035\006\003\125\004
\003\014\026\124\145\154\151\141\123\157\156\145\162\141\040\122
\157\157\164\040\103\101\040\166\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\000\225\276\026\240\367\056\106\361\173\071\202\162\372
\213\315\226
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
#
# Certificate "E-Tugra Certification Authority"
# Issuer: CN=E-Tugra Certification Authority, OU=E-Tugra Sertifikasyon Merkezi, O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A....,L=Ankara,C=TR
# Serial Number:6a:68:3e:9c:51:9b:cb:53
# Subject: CN=E-Tugra Certification Authority, OU=E-Tugra Sertifikasyon Merkezi, O=E-Tu..ra EBG Bili..im
Teknolojileri ve Hizmetleri A....,L=Ankara,C=TR
# Not Valid Before: Tue Mar 05 12:09:48 2013
# Not Valid After: Fri Mar 03 12:09:48 2023
# Fingerprint (SHA-256):
B0:BF:D5:2B:B0:D7:D9:BD:92:BF:5D:4D:C1:3D:A2:55:C0:2C:54:2F:37:83:65:EA:89:39:11:F5:5E:55:F2:3C
# Fingerprint (SHA1): 51:C6:E7:08:49:06:6E:F3:92:D4:5C:A0:0D:6D:A3:62:8F:C3:52:39
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "E-Tugra Certification Authority"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162
\label{eq:condition} $$ 304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151 $$
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040
\305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006
\003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150
\157\162\151\164\171
END
CKA_ID UTF8 "0"
```

#### CKA\_ISSUER MULTILINE\_OCTAL

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\152\150\076\234\121\233\313\123

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\113\060\202\004\063\240\003\002\001\002\002\010\152 \150\076\234\121\233\313\123\060\015\006\011\052\206\110\206\367 \015\001\001\013\005\000\060\201\262\061\013\060\011\006\003\125 \004\006\023\002\124\122\061\017\060\015\006\003\125\004\007\014  $\label{eq:condition} $$ \006\101\156\153\141\162\141\061\100\060\076\006\003\125\004\012 $$$ \014\067\105\055\124\165\304\237\162\141\040\105\102\107\040\102 \151\154\151\305\237\151\155\040\124\145\153\156\157\154\157\152 \151\154\145\162\151\040\166\145\040\110\151\172\155\145\164\154 \145\162\151\040\101\056\305\236\056\061\046\060\044\006\003\125  $\\ \\004\\\\013\\\\014\\\\035\\\\105\\\\055\\\\124\\\\165\\\\147\\\\162\\\\141\\\\040\\\\123\\\\145\\\\162\\\\164$ \151\146\151\153\141\163\171\157\156\040\115\145\162\153\145\172 \151\061\050\060\046\006\003\125\004\003\014\037\105\055\124\165  $\\ 147 \\ 162 \\ 141 \\ 040 \\ 103 \\ 145 \\ 162 \\ 164 \\ 151 \\ 146 \\ 151 \\ 143 \\ 141 \\ 164 \\ 151 \\ 157 \\$ \156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061 \063\060\063\060\065\061\062\060\071\064\070\132\027\015\062\063 \060\063\060\063\061\062\060\071\064\070\132\060\201\262\061\013 \060\011\006\003\125\004\006\023\002\124\122\061\017\060\015\006 \003\125\004\007\014\006\101\156\153\141\162\141\061\100\060\076 \006\003\125\004\012\014\067\105\055\124\165\304\237\162\141\040  $\label{eq:condition} $$ \frac{156}{157}\frac{4157}{152}\frac{151}{154}\frac{145}{162}\frac{151}{040}\frac{166}{145}\frac{110}{151}$$$ \172\155\145\164\154\145\162\151\040\101\056\305\236\056\061\046 \060\044\006\003\125\004\013\014\035\105\055\124\165\147\162\141 \040\123\145\162\164\151\146\151\153\141\163\171\157\156\040\115 \145\162\153\145\172\151\061\050\060\046\006\003\125\004\003\014 \037\105\055\124\165\147\162\141\040\103\145\162\164\151\146\151 \143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171 \060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001 \001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001 \000\342\365\077\223\005\121\036\205\142\124\136\172\013\365\030

\007\203\256\176\257\174\367\324\212\153\245\143\103\071\271\113 \367\303\306\144\211\075\224\056\124\200\122\071\071\007\113\113 \335\205\007\166\207\314\277\057\225\114\314\175\247\075\274\107 \017\230\160\370\214\205\036\164\216\222\155\033\100\321\231\015 \273\165\156\310\251\153\232\300\204\061\257\312\103\313\353\053  $\label{eq:condition} $$ \004\350\217\227\153\001\233\325\016\112\010\252\133\222\164\205$ \103\323\200\256\241\210\133\256\263\352\136\313\026\232\167\104 \310\241\366\124\150\316\336\217\227\053\272\133\100\002\014\144  $\label{eq:condition} $$ \027\300\265\223\315\341\361\023\146\316\014\171\357\321\221\050 $$$ \253\137\240\022\122\060\163\031\216\217\341\214\007\242\303\273 \112\360\352\037\025\250\356\045\314\244\106\370\033\042\357\263  $\label{eq:condition} $$ \016\103\272\054\044\270\305\054\134\324\034\370\135\144\275\303$ \223\136\050\247\077\047\361\216\036\323\052\120\005\243\125\331  $\label{eq:condition} $$ \frac{313}347\\071\\123\\300\\230\\236\\214\\124\\142\\213\\046\\260\\367\\175\\215$ \174\344\306\236\146\102\125\202\107\347\262\130\215\146\367\007 \174\056\066\346\120\034\077\333\103\044\305\277\206\107\171\263 \171\034\367\132\364\023\354\154\370\077\342\131\037\225\356\102 \076\271\255\250\062\205\111\227\106\376\113\061\217\132\313\255 \164\107\037\351\221\267\337\050\004\042\240\324\017\135\342\171 \117\352\154\205\206\275\250\246\316\344\372\303\341\263\256\336 \074\121\356\313\023\174\001\177\204\016\135\121\224\236\023\014 \266\056\245\114\371\071\160\066\157\226\312\056\014\104\125\305  $\label{eq:condition} $$ \frac{312}372\frac{35}{002}\frac{243}{337}\frac{326}{144}\frac{132}{263}\frac{001}{012}\frac{251}{265}\frac{012}{144}\frac{132}{263}\frac{135}{001}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002}\frac{135}{002$ \107\027\377\357\221\100\052\216\241\106\072\061\230\345\021\374  $\label{eq:condition} $$ \frac{314}273\frac{111}126\frac{212}374\frac{271}320\frac{141}232\frac{157}145\frac{154}346\frac{303}313}{111} $$$ \076\165\111\376\217\247\342\211\305\147\327\235\106\023\116\061 \166\073\044\263\236\021\145\206\253\177\357\035\324\370\274\347 \254\132\134\267\132\107\134\125\316\125\264\042\161\133\133\013 \360\317\334\240\141\144\352\251\327\150\012\143\247\340\015\077 \240\257\323\252\322\176\357\121\240\346\121\053\125\222\025\027  $\label{eq:condition} $$ 123\313\267\146\016\146\114\370\371\165\114\220\347\022\160\307 $$$ \105\002\003\001\000\001\243\143\060\141\060\035\006\003\125\035 \016\004\026\004\024\056\343\333\262\111\320\234\124\171\134\372 \047\052\376\314\116\322\350\116\124\060\017\006\003\125\035\023 \001\001\377\004\005\060\003\001\001\377\060\037\006\003\125\035 \043\004\030\060\026\200\024\056\343\333\262\111\320\234\124\171 \134\372\047\052\376\314\116\322\350\116\124\060\016\006\003\125 \035\017\001\001\377\004\004\003\002\001\006\060\015\006\011\052 \206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\005 \067\072\364\115\267\105\342\105\165\044\217\266\167\122\350\034 \330\020\223\145\363\362\131\006\244\076\036\051\354\135\321\320 \253\174\340\012\220\110\170\355\116\230\003\231\376\050\140\221 \035\060\035\270\143\174\250\346\065\265\372\323\141\166\346\326 \007\113\312\151\232\262\204\172\167\223\105\027\025\237\044\320 \230\023\022\377\273\240\056\375\116\114\207\370\316\134\252\230 \033\005\340\000\106\112\202\200\245\063\213\050\334\355\070\323 \337\345\076\351\376\373\131\335\141\204\117\322\124\226\023\141 

\357\263\102\107\315\073\125\023\006\260\011\333\375\143\366\072 \210\012\231\157\176\341\316\033\123\152\104\146\043\121\010\173  $\label{eq:condition} $$ \274\133\122\242\375\006\067\070\100\141\217\112\226\270\220\067$  $\label{eq:condition} $$ 370\146\307\170\220\000\025\056\213\255\121\065\123\007\250\153$ \150\256\371\116\074\007\046\315\010\005\160\314\071\077\166\275 \245\323\147\046\001\206\246\123\322\140\073\174\103\177\125\212 \274\225\032\301\050\071\114\037\103\322\221\364\162\131\212\271 \126\374\077\264\235\332\160\234\166\132\214\103\120\356\216\060 \162\115\337\377\111\367\306\251\147\331\155\254\002\021\342\072 \026\045\247\130\010\313\157\123\101\234\110\070\107\150\063\321  $\label{eq:condition} $$ 327\307\217\324\164\041\324\303\005\220\172\377\316\226\210\261$  $\label{eq:condition} $$ \025\051\135\043\253\320\140\241\022\117\336\364\027\315\062\345 $$$ \311\277\310\103\255\375\056\216\361\257\342\364\230\372\022\037  $\label{eq:condition} $$ \040\330\300\247\014\205\305\220\364\073\055\226\046\261\054\276$ \114\253\353\261\322\212\311\333\170\023\017\036\011\235\155\217 \000\237\002\332\301\372\037\172\172\011\304\112\346\210\052\227 \237\211\213\375\067\137\137\072\316\070\131\206\113\257\161\013 \264\330\362\160\117\237\062\023\343\260\247\127\345\332\332\103 \313\204\064\362\050\304\352\155\364\052\357\301\153\166\332\373  $\label{eq:condition} $$ \frac{273}205\\074\\322\\123\\302\\115\\276\\161\\341\\105\\321\\375\\043\\147$ \015\023\165\373\317\145\147\042\235\256\260\011\321\011\377\035  $\\ \\064\\277\\376\\043\\227\\067\\322\\071\\372\\075\\015\\006\\013\\264\\333\\073$ \243\253\157\134\035\266\176\350\263\202\064\355\006\134\044 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "E-Tugra Certification Authority"

# Issuer: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im Teknolojileri ve Hizmetleri A....,L=Ankara,C=TR

# Serial Number:6a:68:3e:9c:51:9b:cb:53

# Subject: CN=E-Tugra Certification Authority,OU=E-Tugra Sertifikasyon Merkezi,O=E-Tu..ra EBG Bili..im Teknolojileri ve Hizmetleri A....,L=Ankara,C=TR

# Not Valid Before: Tue Mar 05 12:09:48 2013

# Not Valid After: Fri Mar 03 12:09:48 2023

# Fingerprint (SHA-256):

B0:BF:D5:2B:B0:D7:D9:BD:92:BF:5D:4D:C1:3D:A2:55:C0:2C:54:2F:37:83:65:EA:89:39:11:F5:5E:55:F2:3C

# Fingerprint (SHA1): 51:C6:E7:08:49:06:6E:F3:92:D4:5C:A0:0D:6D:A3:62:8F:C3:52:39

 ${\tt CKA\_CLASS\ CK\_OBJECT\_CLASS\ CKO\_NSS\_TRUST}$ 

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "E-Tugra Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \frac{347}{010}\frac{111}{006}\frac{363}{222}\frac{324}{134}\frac{240}{015}\frac{155}{243}\frac{142}{142} $$$ 

 $\verb|\217|303|122|071|$ 

**END** 

```
\label{eq:condition} $$ \270\241\003\143\260\275\041\161\160\212\157\023\072\273\171\111
END
CKA ISSUER MULTILINE OCTAL
\060\201\262\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\017\060\015\006\003\125\004\007\014\006\101\156\153\141\162
\141\061\100\060\076\006\003\125\004\012\014\067\105\055\124\165
\label{eq:condition} $$ 304\237\162\141\040\105\102\107\040\102\151\154\151\305\237\151 $$
\155\040\124\145\153\156\157\154\157\152\151\154\145\162\151\040
\166\145\040\110\151\172\155\145\164\154\145\162\151\040\101\056
\label{eq:condition} $$ \305\236\056\061\046\060\044\006\003\125\004\013\014\035\105\055$
\171\157\156\040\115\145\162\153\145\172\151\061\050\060\046\006
\label{eq:condition} $$ \003\125\004\003\014\037\105\055\124\165\147\162\141\040\103\145
\157\162\151\164\171
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\010\152\150\076\234\121\233\313\123
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "T-TeleSec GlobalRoot Class 2"
# Issuer: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH,C=DE
# Serial Number: 1 (0x1)
# Subject: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services
GmbH.C=DE
# Not Valid Before: Wed Oct 01 10:40:14 2008
# Not Valid After: Sat Oct 01 23:59:59 2033
# Fingerprint (SHA-256):
91:E2:F5:78:8D:58:10:EB:A7:BA:58:73:7D:E1:54:8A:8E:CA:CD:01:45:98:BC:0B:14:3E:04:1B:17:05:25:52
# Fingerprint (SHA1): 59:0D:2D:7D:88:4F:40:2E:61:7E:A5:62:32:17:65:CF:17:D8:94:E9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040
```

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:control_loss} $$ 123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155\163\040\124\165\163\164\040\103\145\156\164\145\162\061\045\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154\141\163\163\040\062$ 

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\201\202\061\013\060\011\006\003\125\004\012\014\042\124\055\123\171\163\164\145\155\163\040\105\156\164\145\162\160\162\151\163\145\040\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155\163\040\124\162\165\163\164\040\103\145\156\164\145\162\061\045\166\0043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154\141\163\163\040\062$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\303\060\202\002\253\240\003\002\001\002\002\001\001 \060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060 \201\202\061\013\060\011\006\003\125\004\006\023\002\104\105\061 \053\060\051\006\003\125\004\012\014\042\124\055\123\171\163\164 \145\155\163\040\105\156\164\145\162\160\162\151\163\145\040\123 \145\162\166\151\143\145\163\040\107\155\142\110\061\037\060\035 \006\003\125\004\013\014\026\124\055\123\171\163\164\145\155\163  $\label{eq:condition} $$ \040\124\162\165\163\164\040\103\145\156\164\145\162\061\045\060$$$ \043\006\003\125\004\003\014\034\124\055\124\145\154\145\123\145 \143\040\107\154\157\142\141\154\122\157\157\164\040\103\154\141 \163\163\040\062\060\036\027\015\060\070\061\060\060\061\061\060 \064\060\061\064\132\027\015\063\063\061\060\060\061\062\063\065 \071\065\071\132\060\201\202\061\013\060\011\006\003\125\004\006 \023\002\104\105\061\053\060\051\006\003\125\004\012\014\042\124 \055\123\171\163\164\145\155\163\040\105\156\164\145\162\160\162  $\label{eq:condition} $$ \frac{151}{163}\frac{145}{040}\frac{123}{145}\frac{162}{166}\frac{151}{143}\frac{145}{163}\frac{040}{107}\frac{155}{142} $$$ \163\164\145\155\163\040\124\162\165\163\164\040\103\145\156\164 \145\162\061\045\060\043\006\003\125\004\003\014\034\124\055\124 \145\154\145\123\145\143\040\107\154\157\142\141\154\122\157\157 \164\040\103\154\141\163\163\040\062\060\202\001\042\060\015\006 \011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017 \000\060\202\001\012\002\202\001\001\000\252\137\332\033\137\350 \163\221\345\332\134\364\242\346\107\345\363\150\125\140\005\035 \002\244\263\233\131\363\036\212\257\064\255\374\015\302\331\110

\031\356\151\217\311\040\374\041\252\007\031\355\260\134\254\145 \307\137\355\002\174\173\174\055\033\326\272\271\200\302\030\202 \026\204\372\146\260\010\306\124\043\201\344\315\271\111\077\366  $\label{eq:condition} $$ \frac{117}{156}067\frac{110}{050}070\frac{017}{305}276\frac{347}{150}\frac{160}{375}071\frac{227}{115}$  $\label{eq:condition} $$ 322\307\230\221\120\252\304\104\263\043\175\071\107\351\122\142$ \326\022\223\136\267\061\226\102\005\373\166\247\036\243\365\302 \374\351\172\305\154\251\161\117\352\313\170\274\140\257\307\336 \364\331\313\276\176\063\245\156\224\203\360\064\372\041\253\352 \216\162\240\077\244\336\060\133\357\206\115\152\225\133\103\104 \250\020\025\034\345\001\127\305\230\361\346\006\050\221\252\040  $\label{eq:condition} $$ 305 \times 267 \times 123 \times 46 \times 121 \times 103 \times 262 \times 130 \times 1225 \times 130 \times 41 \times 100 \times 171 \times 166 \times 331 \times 1200 \times 120 \times 1200 \times$ \300\215\174\201\363\162\160\236\157\376\032\216\331\137\065\306 \262\157\064\174\276\110\117\342\132\071\327\330\235\170\236\237  $\label{eq:condition} $$ \206\076\003\136\031\213\104\242\325\307\002\003\001\000\001\243$  $\label{eq:condition} $$ 102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060 $$$ \003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004  $\label{eq:condition} $$ \003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\277 $$$ \131\040\066\000\171\240\240\042\153\214\325\362\141\322\270\054 \313\202\112\060\015\006\011\052\206\110\206\367\015\001\001\013  $\label{eq:condition} $$ \005\000\003\202\001\001\000\061\003\242\141\013\037\164\350\162 $$$ \066\306\155\371\115\236\372\042\250\341\201\126\317\315\273\237 \352\253\221\031\070\257\252\174\025\115\363\266\243\215\245\364 \216\366\104\251\247\350\041\225\255\076\000\142\026\210\360\002 \272\374\141\043\346\063\233\060\172\153\066\142\173\255\004\043  $\label{eq:condition} $$ \204\130\145\342\333\053\212\347\045\123\067\142\123\137\274\332 $$$ \001\142\051\242\246\047\161\346\072\042\176\301\157\035\225\160 \040\112\007\064\337\352\377\025\200\345\272\327\172\330\133\165  $\label{eq:condition} $$ 174\005\172\051\107\176\100\250\061\023\167\315\100\073\264\121 $$$ \107\172\056\021\343\107\021\336\235\146\320\213\325\124\146\372 \203\125\352\174\302\051\211\033\351\157\263\316\342\005\204\311  $\label{eq:condition} $$ \057\076\170\205\142\156\311\137\301\170\143\164\130\300\110\030 $$$ \014\231\071\353\244\314\032\265\171\132\215\025\234\330\024\015 \366\172\007\127\307\042\203\005\055\074\233\045\046\075\030\263 \251\103\174\310\310\253\144\217\016\243\277\234\033\235\060\333 \332\320\031\056\252\074\361\373\063\200\166\344\315\255\031\117 \005\047\216\023\241\156\302

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "T-TeleSec GlobalRoot Class 2"

<sup>#</sup> Issuer: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

<sup>#</sup> Serial Number: 1 (0x1)

<sup>#</sup> Subject: CN=T-TeleSec GlobalRoot Class 2,OU=T-Systems Trust Center,O=T-Systems Enterprise Services GmbH,C=DE

<sup>#</sup> Not Valid Before: Wed Oct 01 10:40:14 2008

```
# Not Valid After: Sat Oct 01 23:59:59 2033
# Fingerprint (SHA-256):
91:E2:F5:78:8D:58:10:EB:A7:BA:58:73:7D:E1:54:8A:8E:CA:CD:01:45:98:BC:0B:14:3E:04:1B:17:05:25:52
# Fingerprint (SHA1): 59:0D:2D:7D:88:4F:40:2E:61:7E:A5:62:32:17:65:CF:17:D8:94:E9
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "T-TeleSec GlobalRoot Class 2"
CKA CERT SHA1 HASH MULTILINE OCTAL
\131\015\055\175\210\117\100\056\141\176\245\142\062\027\145\317
\027\330\224\351
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\label{eq:condition} $$ \053\233\236\344\173\154\037\000\162\032\314\301\167\171\337\152
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\104\105
\label{eq:condition} $$ \061\053\060\051\006\003\125\004\012\014\042\124\055\123\171\163
\123\145\162\166\151\143\145\163\040\107\155\142\110\061\037\060
\035\006\003\125\004\013\014\026\124\055\123\171\163\164\145\155
\060\043\006\003\125\004\003\014\034\124\055\124\145\154\145\123
\145\143\040\107\154\157\142\141\154\122\157\157\164\040\103\154
\141\163\163\040\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "Atos TrustedRoot 2011"
# Issuer: C=DE,O=Atos,CN=Atos TrustedRoot 2011
# Serial Number:5c:33:cb:62:2c:5f:b3:32
# Subject: C=DE,O=Atos,CN=Atos TrustedRoot 2011
# Not Valid Before: Thu Jul 07 14:58:30 2011
# Not Valid After: Tue Dec 31 23:59:59 2030
# Fingerprint (SHA-256):
F3:56:BE:A2:44:B7:A9:1E:B3:5D:53:CA:9A:D7:86:4A:CE:01:8E:2D:35:D5:F8:F9:6D:DF:68:A6:F4:1A:A4:74
# Fingerprint (SHA1): 2B:B1:F5:3E:55:0C:1D:C5:F1:D4:E6:B7:6A:46:4B:55:06:02:AC:21
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
```

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA LABEL UTF8 "Atos TrustedRoot 2011"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{lem:condition} $$ \000/074/061/036/060/034/006/003/125/004/003/014/025/101/164/157 $$ \163/040/124/162/165/163/164/145/144/122/157/157/164/040/062/060 $$ \061/061/061/015/060/013/006/003/125/004/012/014/004/101/164/157 $$ \163/061/013/060/011/006/003/125/004/006/023/002/104/105 $$ END$ 

LND

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{lem:condition} $$ \000/074/061/036/060/034/006/003/125/004/003/014/025/101/164/157 $$ \163/040/124/162/165/163/164/145/144/122/157/157/164/040/062/060 $$ \061/061/061/015/060/013/006/003/125/004/012/014/004/101/164/157 $$ \163/061/013/060/011/006/003/125/004/006/023/002/104/105 $$ END$ 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\134\063\313\142\054\137\263\062

**END** 

CKA VALUE MULTILINE OCTAL

\060\202\003\167\060\202\002\137\240\003\002\001\002\002\010\134  $\label{eq:condition} $$ \063\313\142\054\137\263\062\060\015\006\011\052\206\110\206\367 $$$ \015\001\001\013\005\000\060\074\061\036\060\034\006\003\125\004  $\\ \\003\\014\\025\\101\\164\\157\\163\\040\\124\\162\\165\\163\\164\\145\\144\\122$ \157\157\164\040\062\060\061\061\061\015\060\013\006\003\125\004 \012\014\004\101\164\157\163\061\013\060\011\006\003\125\004\006  $\label{eq:condition} $$ \023\02\104\105\060\036\027\015\061\061\060\067\060\067\061\064$$$ \065\070\063\060\132\027\015\063\060\061\062\063\061\062\063\065 \071\065\071\132\060\074\061\036\060\034\006\003\125\004\003\014  $\label{eq:condition} $$ \025\101\164\157\163\040\124\162\165\163\164\145\144\122\157\157 $$$ \164\040\062\060\061\061\061\061\015\060\013\006\003\125\004\012\014 \004\101\164\157\163\061\013\060\011\006\003\125\004\006\023\002 \104\105\060\202\001\042\060\015\006\011\052\206\110\206\367\015 \001\001\001\005\000\003\202\001\017\000\060\202\001\012\002\202 \001\001\000\225\205\073\227\157\052\073\056\073\317\246\363\051 \065\276\317\030\254\076\252\331\370\115\240\076\032\107\271\274 \232\337\362\376\314\076\107\350\172\226\302\044\216\065\364\251  $\label{eq:condition} $$ \014\374\202\375\155\301\162\142\047\275\352\153\353\347\212\314 $$$ \124\076\220\120\317\200\324\225\373\350\265\202\324\024\305\266 \251\125\045\127\333\261\120\366\260\140\144\131\172\151\317\003  $\verb| 267| 157| 015| 276| 312| 076| 157| 164| 162| 352| 252| 060| 052| 163| 142| 276|$ \111\221\141\310\021\376\016\003\052\367\152\040\334\002\025\015 \136\025\152\374\343\202\301\265\305\235\144\011\154\243\131\230 \007\047\307\033\226\053\141\164\161\154\103\361\367\065\211\020 \340\236\354\125\241\067\042\242\207\004\005\054\107\175\264\034 \271\142\051\146\050\312\267\341\223\365\244\224\003\231\271\160 \205\265\346\110\352\215\120\374\331\336\314\157\007\016\335\013

\162\235\200\060\026\007\225\077\050\016\375\305\165\117\123\326 \164\232\264\044\056\216\002\221\317\166\305\233\036\125\164\234 \170\041\261\360\055\361\013\237\302\325\226\030\037\360\124\042 \172\214\007\002\003\001\000\001\243\175\060\173\060\035\006\003 \125\035\016\004\026\004\024\247\245\006\261\054\246\011\140\356 \321\227\351\160\256\274\073\031\154\333\041\060\017\006\003\125 \035\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003 \125\035\043\004\030\060\026\200\024\247\245\006\261\054\246\011 \140\356\321\227\351\160\256\274\073\031\154\333\041\060\030\006 \003\125\035\040\004\021\060\017\060\015\006\013\053\006\001\004  $\label{eq:condition} $$ \001\260\055\003\004\001\0001\060\016\006\003\125\035\017\001\001$ \377\004\004\003\002\001\206\060\015\006\011\052\206\110\206\367 \015\001\001\001\013\005\000\003\202\001\001\000\046\167\064\333\224  $\label{eq:condition} $$ \frac{110}{206}052\\101\\235\\054\\076\\006\\220\\140\\304\\214\\254\\013\\124\\270$  $\label{eq:condition} $$ \037\271\173\323\007\071\344\372\076\173\262\075\116\355\237\043$ \275\227\363\153\134\357\356\375\100\246\337\241\223\241\012\206 \254\357\040\320\171\001\275\170\367\031\330\044\061\064\004\001 \246\272\025\232\303\047\334\330\117\017\314\030\143\377\231\017 \016\221\153\165\026\341\041\374\330\046\307\107\267\246\317\130 \211\366\264\017\070\265\342\144\334\045\317\246\333\353\232\134 \231\241\305\010\336\375\346\332\325\326\132\105\014\304\267\302  $\verb|\265|024|357|264|021|377|016|025|265|365|365|333|306|275|353|132|$ \247\360\126\042\251\074\145\124\306\025\250\275\206\236\315\203  $\label{eq:condition} $$ \226\150\172\161\201\211\341\013\341\352\021\033\150\010\314\151 $$$ \236\354\236\101\236\104\062\046\172\342\207\012\161\075\353\344 \132\244\322\333\305\315\306\336\140\177\271\363\117\104\222\357  $\label{eq:condition} $$ \052\267\030\076\247\031\331\013\175\261\067\101\102\260\272\140 $$$ \035\362\376\011\021\260\360\207\173\247\235

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "Atos TrustedRoot 2011"
```

F3:56:BE:A2:44:B7:A9:1E:B3:5D:53:CA:9A:D7:86:4A:CE:01:8E:2D:35:D5:F8:F9:6D:DF:68:A6:F4:1A:A4:74

# Fingerprint (SHA1): 2B:B1:F5:3E:55:0C:1D:C5:F1:D4:E6:B7:6A:46:4B:55:06:02:AC:21

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Atos TrustedRoot 2011"

<sup>#</sup> Issuer: C=DE,O=Atos,CN=Atos TrustedRoot 2011

<sup>#</sup> Serial Number:5c:33:cb:62:2c:5f:b3:32

<sup>#</sup> Subject: C=DE,O=Atos,CN=Atos TrustedRoot 2011

<sup>#</sup> Not Valid Before: Thu Jul 07 14:58:30 2011

<sup>#</sup> Not Valid After: Tue Dec 31 23:59:59 2030

<sup>#</sup> Fingerprint (SHA-256):

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\label{eq:condition} $$ \053\261\365\076\125\014\035\305\361\324\346\267\152\106\113\125
\006\002\254\041
END
CKA CERT MD5 HASH MULTILINE OCTAL
\256\271\304\062\113\254\177\135\146\314\167\224\273\052\167\126
END
CKA ISSUER MULTILINE OCTAL
\060\074\061\036\060\034\006\003\125\004\003\014\025\101\164\157
\163\040\124\162\165\163\164\145\144\122\157\157\164\040\062\060
\163\061\013\060\011\006\003\125\004\006\023\002\104\105
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\134\063\313\142\054\137\263\062
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "QuoVadis Root CA 1 G3"
# Issuer: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM
# Serial Number:78:58:5f:2e:ad:2c:19:4b:e3:37:07:35:34:13:28:b5:96:d4:65:93
# Subject: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM
# Not Valid Before: Thu Jan 12 17:27:44 2012
# Not Valid After: Sun Jan 12 17:27:44 2042
# Fingerprint (SHA-256):
8A:86:6F:D1:B2:76:B5:7E:57:8E:92:1C:65:82:8A:2B:ED:58:E9:F2:F2:88:05:41:34:B7:F1:F4:BF:C9:CC:74
# Fingerprint (SHA1): 1B:8E:EA:57:96:29:1A:C9:39:EA:B8:0A:81:1A:73:73:C0:93:79:67
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "QuoVadis Root CA 1 G3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\061\040\107\063
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061
```

\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144 \151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003 \125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157 \157\164\040\103\101\040\061\040\107\063

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\024\170\130\137\056\255\054\031\113\343\067\007\065\064\023 \050\265\226\324\145\223

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \0.060\202\005\140\060\202\003\110\240\003\002\001\002\002\002\170$ \130\137\056\255\054\031\113\343\067\007\065\064\023\050\265\226 \324\145\223\060\015\006\011\052\206\110\206\367\015\001\001\013  $\label{eq:condition} $$ \005\000\060\110\061\013\060\011\006\003\125\004\006\023\002\102 $$$ \141\144\151\163\040\114\151\155\151\164\145\144\061\036\060\034  $\label{eq:condition} $$ \006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040 $$$ \122\157\157\164\040\103\101\040\061\040\107\063\060\036\027\015 \061\062\060\061\061\062\061\067\062\067\064\064\132\027\015\064  $\label{eq:condition} $$ \062\061\061\062\061\062\067\064\064\132\060\110\061\013$$ \060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006 \003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114  $\label{eq:condition} $$ \frac{151}{155}\frac{151}{164}\frac{145}{144}\frac{061}{036}\frac{060}{034}\frac{006}{003}\frac{125}{004}\frac{003}{023} $$$ \025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103 \101\040\061\040\107\063\060\202\002\042\060\015\006\011\052\206 \110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202 \002\012\002\202\002\001\000\240\276\120\020\216\351\362\154\100 \264\004\234\205\271\061\312\334\055\344\021\251\004\074\033\125 \301\347\130\060\035\044\264\303\357\205\336\214\054\341\301\075 \337\202\346\117\255\107\207\154\354\133\111\301\112\325\273\217  $\label{eq:condition} $$ \frac{354}{207} 254\frac{177}{202} 232\frac{206}{354}075\frac{231}{122}001\frac{322}{065} 236$ \254\332\360\123\311\146\074\324\254\002\001\332\044\323\073\250 \002\106\257\244\034\343\370\163\130\166\267\366\016\220\015\265 \360\317\314\372\371\306\114\345\303\206\060\012\215\027\176\065 \353\305\337\273\016\234\300\215\207\343\210\070\205\147\372\076 \307\253\340\023\234\005\030\230\317\223\365\261\222\264\374\043 \323\317\325\304\047\111\340\236\074\233\010\243\213\135\052\041 \340\374\071\252\123\332\175\176\317\032\011\123\274\135\005\004  $\label{eq:condition} $$ \frac{317}{241}\frac{217}{213}\frac{66}{202}\frac{315}{241}\frac{370}{322}\frac{307}{024}\frac{167}{133}\frac{220}{202} $$$  $\label{eq:condition} $$ \066\007\201\233\076\006\372\122\136\143\305\246\000\376\245\351 $$$ \122\033\122\265\222\071\162\003\011\142\275\260\140\026\156\246 \335\045\302\003\146\335\363\004\321\100\342\116\213\206\364\157 \345\203\240\047\204\136\004\301\365\220\275\060\075\304\357\250 \151\274\070\233\244\244\226\321\142\332\151\300\001\226\256\313 \304\121\064\352\014\252\377\041\216\131\217\112\134\344\141\232 \247\322\351\052\170\215\121\075\072\025\356\242\131\216\251\134 \336\305\371\220\042\345\210\105\161\335\221\231\154\172\237\075 \075\230\174\136\366\276\026\150\240\136\256\013\043\374\132\017

\252\042\166\055\311\241\020\035\344\323\104\043\220\210\237\306 \052\346\327\365\232\263\130\036\057\060\211\010\033\124\242\265 \230\043\354\010\167\034\225\135\141\321\313\211\234\137\242\112 \221\232\357\041\252\111\026\010\250\275\141\050\061\311\164\255 \205\366\331\305\261\213\321\345\020\062\115\137\213\040\072\074 \111\037\063\205\131\015\333\313\011\165\103\151\163\373\153\161 \175\360\337\304\114\175\306\243\056\310\225\171\313\163\242\216 \116\115\044\373\136\344\004\276\162\033\246\047\055\111\132\231  $\label{eq:condition} $$ \frac{327}134\\011\\040\\267\\177\\224\\271\\117\\361\\015\\034\\136\\210\\102$ \033\021\267\347\221\333\236\154\364\152\337\214\006\230\003\255 \314\050\357\245\107\363\123\002\003\001\000\001\243\102\060\100  $\label{eq:condition} $$ \000\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001 $$$ \377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  $\label{eq:condition} $$ \006\003\125\035\016\004\026\004\024\243\227\326\363$  $\label{eq:condition} $$ 136\242\020\341\253\105\237\074\027\144\074\356\001\160\234\314$ \060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  $\label{eq:condition} $$ \202\001\000\030\372\133\165\374\076\172\307\137\167\307\312 $$$ \337\317\137\303\022\304\100\135\324\062\252\270\152\327\325\025 \025\106\230\043\245\346\220\133\030\231\114\343\255\102\243\202  $\label{eq:condition} $$ \061\066\210\315\351\373\304\004\226\110\213\001\307\215\001\317 $$$ \133\063\006\226\106\146\164\035\117\355\301\266\271\264\015\141 \314\143\176\327\056\167\214\226\034\052\043\150\153\205\127\166  $\label{eq:condition} $$ 160\063\023\376\341\117\246\043\167\030\372\032\214\350\275\145$$ \311\317\077\364\311\027\334\353\307\274\300\004\056\055\106\057 \151\146\303\033\217\376\354\076\323\312\224\277\166\012\045\015 \251\173\002\034\251\320\073\137\013\300\201\072\075\144\341\277 \247\055\116\275\115\304\330\051\306\042\030\320\305\254\162\002  $\label{eq:condition} $$ \202\077\252\072\242\072\042\227\061\335\010\143\303\165\024\271 $$$ \140\050\055\133\150\340\026\251\146\202\043\121\365\353\123\330 \061\233\173\351\267\235\113\353\210\026\317\371\135\070\212\111  $\label{eq:condition} $$ \060\217\355\361\353\031\364\167\032\061\030\115\147\124\154\057$$$ \157\145\371\333\075\354\041\354\136\364\364\213\312\140\145\124 \321\161\144\364\371\246\243\201\063\066\063\161\360\244\170\137 \116\255\203\041\336\064\111\215\350\131\254\235\362\166\132\066 \362\023\364\257\340\011\307\141\052\154\367\340\235\256\273\206 \112\050\157\056\356\264\171\315\220\063\303\263\166\372\365\360 \154\235\001\220\372\236\220\366\234\162\317\107\332\303\037\344 \065\040\123\362\124\321\337\141\203\246\002\342\045\070\336\205  $\label{eq:condition} $$ \062\055\136\163\220\122\135\102\304\316\075\113\341\371\031\204$ \035\325\242\120\314\101\373\101\024\303\275\326\311\132\243\143 \146\002\200\275\005\072\073\107\234\354\000\046\114\365\210\121 \277\250\043\177\030\007\260\013\355\213\046\241\144\323\141\112 \353\134\237\336\263\257\147\003\263\037\335\155\135\151\150\151 \253\136\072\354\174\151\274\307\073\205\116\236\025\271\264\025 \117\303\225\172\130\327\311\154\351\154\271\363\051\143\136\264 \054\360\055\075\355\132\145\340\251\133\100\302\110\231\201\155 \236\037\006\052\074\022\264\213\017\233\242\044\360\246\215\326 \172\340\113\266\144\226\143\225\204\302\112\315\034\056\044\207

\063\140\345\303 **END** CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE # Trust for "QuoVadis Root CA 1 G3" # Issuer: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM # Serial Number:78:58:5f:2e:ad:2c:19:4b:e3:37:07:35:34:13:28:b5:96:d4:65:93 # Subject: CN=QuoVadis Root CA 1 G3,O=QuoVadis Limited,C=BM # Not Valid Before: Thu Jan 12 17:27:44 2012 # Not Valid After: Sun Jan 12 17:27:44 2042 # Fingerprint (SHA-256): 8A:86:6F:D1:B2:76:B5:7E:57:8E:92:1C:65:82:8A:2B:ED:58:E9:F2:F2:88:05:41:34:B7:F1:F4:BF:C9:CC:74 # Fingerprint (SHA1): 1B:8E:EA:57:96:29:1A:C9:39:EA:B8:0A:81:1A:73:73:C0:93:79:67 CKA CLASS CK OBJECT CLASS CKO NSS TRUST CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA PRIVATE CK BBOOL CK FALSE CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE CKA\_LABEL UTF8 "QuoVadis Root CA 1 G3" CKA CERT SHA1 HASH MULTILINE OCTAL \033\216\352\127\226\051\032\311\071\352\270\012\201\032\163\163 \300\223\171\147 **END** CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL \244\274\133\077\376\067\232\372\144\360\342\372\005\075\013\253 **END** CKA\_ISSUER MULTILINE\_OCTAL \060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061 \031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144 \151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003 \125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157 \157\164\040\103\101\040\061\040\107\063 **END** CKA SERIAL NUMBER MULTILINE OCTAL \002\024\170\130\137\056\255\054\031\113\343\067\007\065\064\023 \050\265\226\324\145\223 **END** CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Certificate "QuoVadis Root CA 2 G3" #

# Issuer: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

# Serial Number:44:57:34:24:5b:81:89:9b:35:f2:ce:b8:2b:3b:5b:a7:26:f0:75:28

# Subject: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

# Not Valid Before: Thu Jan 12 18:59:32 2012 # Not Valid After : Sun Jan 12 18:59:32 2042

# Fingerprint (SHA-256):

8F:E4:FB:0A:F9:3A:4D:0D:67:DB:0B:EB:B2:3E:37:C7:1B:F3:25:DC:BC:DD:24:0E:A0:4D:AF:58:B4:7E:18:40

# Fingerprint (SHA1): 09:3C:61:F3:8B:8B:DC:7D:55:DF:75:38:02:05:00:E1:25:F5:C8:36

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "QuoVadis Root CA 2 G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \001100610130600111006003125\\004006023\\00210021115\\061\\031\\060\\027\\006\\003\\125\\004\\0012\\023\\020\\121\\165\\157\\126\\141\\144\\061\\036\\060\\034\\006\\003\\125\\004\\003\\023\\025\\121\\165\\157\\126\\141\\144\\151\\163\\040\\122\\157\\157\\164\\040\\103\\101\\040\\062\\040\\107\\063$ 

**END** 

CKA\_ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000110061013\060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\134\006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103\101\040\062\040\107\063$ 

END

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\140\060\202\003\110\240\003\002\001\002\002\002\104 \127\064\044\133\201\211\233\065\362\316\270\053\073\133\247\046 \360\165\050\060\015\006\011\052\206\110\206\367\015\001\001\013 \005\000\060\110\061\013\060\011\006\003\125\004\006\023\002\102 \115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126 \141\144\151\163\040\114\151\155\151\164\145\144\061\036\060\034  $\label{eq:condition} $$ \006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040 $$$ \122\157\157\164\040\103\101\040\062\040\107\063\060\036\027\015 \061\062\060\061\061\062\061\070\065\071\063\062\132\027\015\064  $\label{eq:condition} $$ \062\061\061\062\061\070\065\071\063\062\132\060\110\061\013 $$$ \060\011\006\003\125\004\006\023\002\102\115\061\031\060\027\006 \003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114 \151\155\151\164\145\144\061\036\060\034\006\003\125\004\003\023 \025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103 \101\040\062\040\107\063\060\202\002\042\060\015\006\011\052\206 \110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202

\002\012\002\202\002\001\000\241\256\045\262\001\030\334\127\210 \077\106\353\371\257\342\353\043\161\342\232\321\141\146\041\137 \252\257\047\121\345\156\033\026\324\055\175\120\260\123\167\275 \170\072\140\342\144\002\233\174\206\233\326\032\216\255\377\037 \025\177\325\225\036\022\313\346\024\204\004\301\337\066\263\026 \237\212\343\311\333\230\064\316\330\063\027\050\106\374\247\311 \360\322\264\325\115\011\162\111\371\362\207\343\251\332\175\241 \175\153\262\072\045\251\155\122\104\254\370\276\156\373\334\246  $\label{eq:condition} $$ 163\221\220\141\246\003\024\040\362\347\207\243\210\255\255\240$$ \214\377\246\013\045\122\045\347\026\001\325\313\270\065\201\014 \243\073\360\341\341\374\132\135\316\200\161\155\370\111\253\076  $\label{eq:condition} $$ \073\272\270\327\200\001\373\245\353\133\263\305\136\140\052\061 $$$ \240\257\067\350\040\072\237\250\062\054\014\314\011\035\323\236 \216\135\274\114\230\356\305\032\150\173\354\123\246\351\024\065 \243\337\315\200\237\014\110\373\034\364\361\277\112\270\372\325 \214\161\112\307\037\255\376\101\232\263\203\135\362\204\126\357 \245\127\103\316\051\255\214\253\125\277\304\373\133\001\335\043 \041\241\130\000\216\303\320\152\023\355\023\343\022\053\200\334 \147\346\225\262\315\036\042\156\052\370\101\324\362\312\024\007 \215\212\125\022\306\151\365\270\206\150\057\123\136\260\322\252 \041\301\230\346\060\343\147\125\307\233\156\254\031\250\125\246 \105\006\320\043\072\333\353\145\135\052\021\021\360\073\117\312 \155\364\064\304\161\344\377\000\132\366\134\256\043\140\205\163 \361\344\020\261\045\256\325\222\273\023\301\014\340\071\332\264 \071\127\265\253\065\252\162\041\073\203\065\347\061\337\172\041 \156\270\062\010\175\035\062\221\025\112\142\162\317\343\167\241 \274\325\021\033\166\001\147\010\340\101\013\303\353\025\156\370 \244\031\331\242\253\257\342\047\122\126\053\002\212\054\024\044 \371\277\102\002\277\046\310\306\217\340\156\070\175\123\055\345 \355\230\263\225\143\150\177\371\065\364\337\210\305\140\065\222  $\label{eq:condition} $$ 300\174\151\034\141\225\026\320\353\336\013\257\076\004\020\105$ \145\130\120\070\257\110\362\131\266\026\362\074\015\220\002\306 \160\056\001\255\074\025\327\002\003\001\000\001\243\102\060\100 \060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001 \377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001 \006\060\035\006\003\125\035\016\004\026\004\024\355\347\157\166 \132\277\140\354\111\133\306\245\167\273\162\026\161\233\304\075  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\013\005\000\003$ \202\002\001\000\221\337\200\077\103\011\176\161\302\367\353\263 \210\217\341\121\262\274\075\165\371\050\135\310\274\231\233\173 \135\252\345\312\341\012\367\350\262\323\237\335\147\061\176\272  $\label{eq:condition} $$ \001\252\307\152\101\073\220\324\010\134\262\140\152\220\360\310 $$$  $\label{eq:condition} $$ \frac{316}{003}142\frac{371}{213}\frac{355}{373}\frac{156}{052}\frac{334}{006}\frac{115}{074}\frac{051}{017}\frac{211}{211}$ \026\212\130\114\110\017\350\204\141\352\074\162\246\167\344\102  $\verb|256|210|243|103|130|171|176|256|312|245|123|015|251|075|160|275|$ \040\031\141\244\154\070\374\103\062\341\301\107\377\370\354\361 \021\042\062\226\234\302\366\133\151\226\173\040\014\103\101\232 \133\366\131\031\210\336\125\210\067\121\013\170\134\012\036\243

\102\375\307\235\210\017\300\362\170\002\044\124\223\257\211\207 \210\311\112\200\035\352\320\156\076\141\056\066\273\065\016\047  $\verb|\|226|375|146|064|073|141|162|163|361|026|134|107|006|124|111|000|$ \172\130\022\260\012\357\205\375\261\270\063\165\152\223\034\022 \346\140\136\157\035\177\311\037\043\313\204\141\237\036\202\104  $\label{eq:condition} $$ \frac{371}137\255\\142\125\044\232\122\230\355\121\347\241\176\227\072}$$ \346\057\037\021\332\123\200\054\205\236\253\065\020\333\042\137  $\label{eq:condition} $$ \frac{305}136\frac{227}123\frac{362}{062}\frac{11}{060}\frac{243}{130}\frac{360}{015}\frac{325}{001}.$ \162\306\261\174\151\173\303\365\066\105\314\141\156\136\114\224 \305\136\256\350\016\136\213\277\367\315\340\355\241\016\033\063 \356\124\030\376\017\276\357\176\204\153\103\343\160\230\333\135 \110\307\263\246\042\365\063\067\132\225\107\237\173\272\030\025  $\label{eq:condition} $$ \frac{377}{326}024\frac{44}{203}111\frac{322}012\frac{47}041\frac{333}017\frac{65}143}140 $$  $\label{eq:condition} $$ \050\042\343\261\225\203\315\205\246\335\057\017\347\147\122\156$$ \273\057\205\174\365\112\163\347\305\076\300\275\041\022\005\077 \374\267\003\111\002\133\310\045\346\342\124\070\365\171\207\214 \035\123\262\116\205\173\006\070\307\054\370\370\260\162\215\045 \345\167\122\364\003\034\110\246\120\137\210\040\060\156\362\202 \103\253\075\227\204\347\123\373\041\301\117\017\042\232\206\270 \131\052\366\107\075\031\210\055\350\205\341\236\354\205\010\152  $\verb| | 261 | 154 | 064 | 311 | 035 | 354 | 110 | 053 | 073 | 170 | 355 | 146 | 304 | 216 | 171 | 151 |$ \203\336\177\214

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "QuoVadis Root CA 2 G3"
```

# Issuer: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

# Serial Number:44:57:34:24:5b:81:89:9b:35:f2:ce:b8:2b:3b:5b:a7:26:f0:75:28

# Subject: CN=QuoVadis Root CA 2 G3,O=QuoVadis Limited,C=BM

# Not Valid Before: Thu Jan 12 18:59:32 2012

# Not Valid After: Sun Jan 12 18:59:32 2042

# Fingerprint (SHA-256):

8F:E4:FB:0A:F9:3A:4D:0D:67:DB:0B:EB:B2:3E:37:C7:1B:F3:25:DC:BC:DD:24:0E:A0:4D:AF:58:B4:7E:18:40

# Fingerprint (SHA1): 09:3C:61:F3:8B:8B:DC:7D:55:DF:75:38:02:05:00:E1:25:F5:C8:36

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

 ${\sf CKA\_PRIVATE\ CK\_BBOOL\ CK\_FALSE}$ 

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "QuoVadis Root CA 2 G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\011\074\141\363\213\334\175\125\337\165\070\002\005\000\341 \045\365\310\066

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\257\014\206\156\277\100\055\177\013\076\022\120\272\022\075\006

```
END
```

### CKA ISSUER MULTILINE OCTAL

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\104\127\064\044\133\201\211\233\065\362\316\270\053\073 \133\247\046\360\165\050

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "QuoVadis Root CA 3 G3"

#

- # Issuer: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
- # Serial Number:2e:f5:9b:02:28:a7:db:7a:ff:d5:a3:a9:ee:bd:03:a0:cf:12:6a:1d
- # Subject: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
- # Not Valid Before: Thu Jan 12 20:26:32 2012
- # Not Valid After: Sun Jan 12 20:26:32 2042
- # Fingerprint (SHA-256):

88:EF:81:DE:20:2E:B0:18:45:2E:43:F8:64:72:5C:EA:5F:BD:1F:C2:D9:D2:05:73:07:09:C5:D8:B8:69:0F:46

# Fingerprint (SHA1): 48:12:BD:92:3C:A8:C4:39:06:E7:30:6D:27:96:E6:A4:CF:22:2E:7D

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "QuoVadis Root CA 3 G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \060\110\061\013\060\011\006\003\125\004\006\023\002\102\115\061 $$$ 

 $\label{eq:condition} $$ \031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144$ 

\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003

\157\164\040\103\101\040\063\040\107\063

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000110061013060011006003125\\004006023\\0021002115\\061\\031\\060\\027\\006\\003\\125\\004\\012\\023\\020\\121\\165\\157\\126\\141\\144\\061\\036\\060\\034\\006\\003\\125\\004\\003\\023\\025\\121\\165\\157\\126\\141\\144\\151\\163\\040\\122\\157\\157\\164\\040\\103\\101\\040\\063\\040\\107\\063$ 

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

\002\024\056\365\233\002\050\247\333\172\377\325\243\251\356\275 \003\240\317\022\152\035

**END** 

### CKA VALUE MULTILINE OCTAL

\060\202\005\140\060\202\003\110\240\003\002\001\002\002\002\005 \365\233\002\050\247\333\172\377\325\243\251\356\275\003\240\317 \022\152\035\060\015\006\011\052\206\110\206\367\015\001\001\013 \005\000\060\110\061\013\060\011\006\003\125\004\006\023\002\102 \115\061\031\060\027\006\003\125\004\012\023\020\121\165\157\126 \141\144\151\163\040\114\151\155\151\164\145\144\061\036\060\034 \006\003\125\004\003\023\025\121\165\157\126\141\144\151\163\040 \122\157\157\164\040\103\101\040\063\040\107\063\060\036\027\015 \061\062\060\061\061\062\062\060\062\066\063\062\132\027\015\064 \062\060\061\061\062\062\060\062\066\063\062\132\060\110\061\013  $\label{eq:condition} $$ \000\01\000\023\002\102\115\061\031\060\027\006 $$$ \003\125\004\012\023\020\121\165\157\126\141\144\151\163\040\114 \151\155\151\164\145\144\061\036\060\034\006\003\125\004\003\023  $\label{eq:condition} $$ \025\121\165\157\126\141\144\151\163\040\122\157\157\164\040\103$ \101\040\063\040\107\063\060\202\002\042\060\015\006\011\052\206 \110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  $\label{eq:condition} $$ \002\01\002\02\001\000\263\313\016\020\147\216\352\024\227 $$$ \247\062\052\012\126\066\177\150\114\307\263\157\072\043\024\221  $\label{eq:condition} $$ 377\031\177\245\312\254\356\263\166\235\172\351\213\033\253\153$  $\label{eq:condition} $$ \061\333\372\013\123\114\257\305\245\032\171\074\212\114\377\254$$$ \337\045\336\116\331\202\062\013\104\336\312\333\214\254\243\156  $\label{eq:condition} $$ \026\203\073\246\144\113\062\211\373\026\026\070\176\353\103\342 $$$ \323\164\112\302\142\012\163\012\335\111\263\127\322\260\012\205 \235\161\074\336\243\313\300\062\363\001\071\040\103\033\065\321 \123\263\261\356\305\223\151\202\076\026\265\050\106\241\336\352 \211\011\355\103\270\005\106\212\206\365\131\107\276\033\157\001 \041\020\271\375\251\322\050\312\020\071\011\312\023\066\317\234 \255\255\100\164\171\053\002\077\064\377\372\040\151\175\323\356 \141\365\272\263\347\060\320\067\043\206\162\141\105\051\110\131 \150\157\167\246\056\201\276\007\115\157\257\316\304\105\023\221 \024\160\006\217\037\237\370\207\151\261\016\357\303\211\031\353 \352\034\141\374\172\154\212\334\326\003\013\236\046\272\022\335  $\label{eq:condition} $\324\124\071\253\046\243\063\352\165\201\332\055\315\017\117\344$  $\label{eq:condition} $$ \003\321\357\025\227\033\153\220\305\002\220\223\146\002\041\261$ \107\336\213\232\112\200\271\125\217\265\242\057\300\326\063\147 \332\176\304\247\264\004\104\353\107\373\346\130\271\367\014\360 \173\053\261\300\160\051\303\100\142\055\073\110\151\334\043\074 \110\353\173\011\171\251\155\332\250\060\230\317\200\162\003\210 \246\133\106\256\162\171\174\010\003\041\145\256\267\341\034\245 \261\052\242\061\336\146\004\367\300\164\350\161\336\377\075\131 \314\226\046\022\213\205\225\127\032\253\153\165\013\104\075\021 \050\074\173\141\267\342\217\147\117\345\354\074\114\140\200\151

\127\070\036\001\133\215\125\350\307\337\300\314\167\043\064\111 \165\174\366\230\021\353\055\336\355\101\056\024\005\002\177\340 \376\040\353\065\347\021\254\042\316\127\075\336\311\060\155\020 \003\205\315\361\377\214\026\265\301\262\076\210\154\140\177\220 \117\225\367\366\055\255\001\071\007\004\372\165\200\175\277\111 \120\355\357\311\304\174\034\353\200\176\333\266\320\335\023\376 \311\323\234\327\262\227\251\002\003\001\000\001\243\102\060\100 \060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001 \377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001 \006\060\035\006\003\125\035\016\004\026\004\024\306\027\320\274 \250\352\002\103\362\033\006\231\135\053\220\040\271\327\234\344  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\013\005\000\003$ \202\002\001\000\064\141\331\126\265\022\207\125\115\335\243\065  $\label{eq:condition} $$ \061\106\273\244\007\162\274\137\141\142\350\245\373\013\067\261 $$$  $\label{eq:condition} $$ \sqrt{074 \times 266 \times 263 \times 372 \times 1235 \times 177 \times 265 \times 244 \times 311 \times 250 \times 223 \times 267 \times 172 \times 161}$$ \050\151\217\163\341\122\220\332\325\276\072\345\267\166\152\126 \200\041\337\135\346\351\072\236\345\076\366\242\151\307\052\012 \260\030\107\334\040\160\175\122\243\076\131\174\301\272\311\310 \025\100\141\312\162\326\160\254\322\267\360\034\344\206\051\360 \316\357\150\143\320\265\040\212\025\141\232\176\206\230\264\311 \302\166\373\314\272\060\026\314\243\141\306\164\023\345\153\357 \243\025\352\003\376\023\213\144\344\323\301\322\350\204\373\111  $\label{eq:condition} $$ \frac{321}020\\115\\171\\146\\353\\252\\375\\364\\215\\061\\036\\160\\024\\255\\334$ \336\147\023\114\201\025\141\274\267\331\221\167\161\031\201\140 \273\360\130\245\265\234\013\367\217\042\125\047\300\113\001\155 \073\231\015\324\035\233\143\147\057\320\356\015\312\146\274\224 \117\246\255\355\374\356\143\254\127\077\145\045\317\262\206\217  $\label{eq:condition} $$ 320\010\377\270\166\024\156\336\345\047\354\253\170\265\123\271 $$$ \266\077\350\040\371\322\250\276\141\106\312\207\214\204\363\371 \361\240\150\233\042\036\201\046\233\020\004\221\161\300\006\037  $\label{eq:condition} $\34\240\323\271\126\247\343\230\055\177\203\235\337\214\053\234$ \062\216\062\224\360\001\074\042\052\237\103\302\056\303\230\071 \007\070\173\374\136\000\102\037\363\062\046\171\203\204\366\345 \360\301\121\022\300\013\036\004\043\014\124\245\114\057\111\305 \112\321\266\156\140\015\153\374\153\213\205\044\144\267\211\016 \253\045\107\133\074\317\176\111\275\307\351\012\306\332\367\176 \016\027\010\323\110\227\320\161\222\360\017\071\076\064\152\034  $\label{eq:condition} $$ \frac{330}{362}042\\256\\273\\151\\364\\063\\264\\246\\110\\125\\321\\017\\016$  $\\ \langle 046 \rangle 350 \rangle 354 \rangle 266 \rangle 013 \rangle 055 \rangle 247 \rangle 205 \rangle 065 \rangle 315 \rangle 375 \rangle 131 \rangle 310 \rangle 237 \rangle 321 \rangle 315 \rangle 315 \rangle 321 \rangle$  $\label{eq:condition} $$ \076\132\051\064\271\075\204\316\261\145\324\131\221\221\126\165 $$$ \041\301\167\236\371\172\341\140\235\323\255\004\030\364\174\353 \136\223\217\123\112\042\051\370\110\053\076\115\206\254\133\177 \313\006\231\131\140\330\130\145\225\215\104\321\367\177\176\047 \177\175\256\200\365\007\114\266\076\234\161\124\231\004\113\375 \130\371\230\364

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "QuoVadis Root CA 3 G3"
# Issuer: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
# Serial Number:2e:f5:9b:02:28:a7:db:7a:ff:d5:a3:a9:ee:bd:03:a0:cf:12:6a:1d
# Subject: CN=QuoVadis Root CA 3 G3,O=QuoVadis Limited,C=BM
# Not Valid Before: Thu Jan 12 20:26:32 2012
# Not Valid After: Sun Jan 12 20:26:32 2042
# Fingerprint (SHA-256):
88:EF:81:DE:20:2E:B0:18:45:2E:43:F8:64:72:5C:EA:5F:BD:1F:C2:D9:D2:05:73:07:09:C5:D8:B8:69:0F:46
# Fingerprint (SHA1): 48:12:BD:92:3C:A8:C4:39:06:E7:30:6D:27:96:E6:A4:CF:22:2E:7D
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "QuoVadis Root CA 3 G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\110\022\275\222\074\250\304\071\006\347\060\155\047\226\346\244
\317\042\056\175
END
CKA CERT MD5 HASH MULTILINE OCTAL
\337\175\271\255\124\157\150\241\337\211\127\003\227\103\260\327
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\11\061\013\060\011\006\003\125\004\006\023\002\102\115\061 $$
\031\060\027\006\003\125\004\012\023\020\121\165\157\126\141\144
\151\163\040\114\151\155\151\164\145\144\061\036\060\034\006\003
\125\004\003\023\025\121\165\157\126\141\144\151\163\040\122\157
\157\164\040\103\101\040\063\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\056\365\233\002\050\247\333\172\377\325\243\251\356\275
\003\240\317\022\152\035
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "DigiCert Assured ID Root G2"
# Issuer: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:0b:93:1c:3a:d6:39:67:ea:67:23:bf:c3:af:9a:f4:4b
# Subject: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After: Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
```

7D:05:EB:B6:82:33:9F:8C:94:51:EE:09:4E:EB:FE:FA:79:53:A1:14:ED:B2:F4:49:49:45:2F:AB:7D:2F:C1:85

# Fingerprint (SHA1): A1:4B:48:D9:43:EE:0A:0E:40:90:4F:3C:E0:A4:C0:91:93:51:5D:3F

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "DigiCert Assured ID Root G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \00145\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023\023\104\151\147\151\143\145\162\164\056\144\151\147\151\143\145\162\164\040\101\163\165\162\145\144\040\111\104\040\122\157\157\164\040\107\062$ 

**END** 

CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \00145\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023\023\104\151\147\151\143\145\162\164\056\144\151\147\151\143\145\162\164\040\101\163\165\162\145\144\040\111\104\040\122\157\157\164\040\107\062$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \02\020\013\223\034\072\326\071\147\352\147\043\277\303\257\232\364\113$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\226\060\202\002\176\240\003\002\001\002\002\002\013 \223\034\072\326\071\147\352\147\043\277\303\257\232\364\113\060 \015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\145 \061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060 \023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164 \040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167  $\label{eq:condition} $$ 167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061$$  $\\ \\044\\060\\042\\006\\003\\125\\004\\003\\023\\033\\104\\151\\147\\151\\103\\145$ \162\164\040\101\163\163\165\162\145\144\040\111\104\040\122\157 \157\164\040\107\062\060\036\027\015\061\063\060\070\060\061\061 \062\060\060\060\060\132\027\015\063\070\060\061\061\065\061\062 \060\060\060\060\132\060\145\061\013\060\011\006\003\125\004\006 \023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104 \151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006 \003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145 \162\164\056\143\157\155\061\044\060\042\006\003\125\004\003\023

\033\104\151\147\151\103\145\162\164\040\101\163\163\165\162\145 \144\040\111\104\040\122\157\157\164\040\107\062\060\202\001\042 \060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  $\label{eq:condition} $$ \202\001\017\000\060\202\001\012\002\202\001\001\000\331\347\050 $$$ \057\122\077\066\162\111\210\223\064\363\370\152\036\061\124\200 \237\255\124\101\265\107\337\226\250\324\257\200\055\271\012\317 \165\375\211\245\175\044\372\343\042\014\053\274\225\027\013\063 \277\031\115\101\006\220\000\275\014\115\020\376\007\265\347\034 \156\042\125\061\145\227\275\323\027\322\036\142\363\333\352\154 \120\214\077\204\014\226\317\267\313\003\340\312\155\241\024\114  $\label{eq:condition} $$ \033\211\335\355\000\260\122\174\257\221\154\261\070\023\321\351$  $\label{eq:condition} $$ \022\010\300\000\260\034\053\021\332\167\160\066\233\256\316\171 $$$ \207\334\202\160\346\011\164\160\125\151\257\243\150\237\277\335 \266\171\263\362\235\160\051\125\364\253\377\225\141\363\311\100  $\label{eq:condition} $$ \frac{321}{276}\frac{223}{273}\frac{323}{210}\frac{273}{235}\frac{277}{162}\frac{132}{126}\frac{161}{161} $$$ \073\077\324\363\321\012\376\050\357\243\356\331\231\257\003\323 \217\140\267\362\222\241\261\275\211\211\037\060\315\303\246\056 \142\063\256\026\002\167\104\132\347\201\012\074\247\104\056\171 \270\077\004\274\134\240\207\341\033\257\121\216\315\354\054\372 \370\376\155\360\072\174\252\213\344\147\225\061\215\002\003\001 \000\001\243\102\060\100\060\017\006\003\125\035\023\001\001\377  $\\ \\004\\ \\005\\ \\060\\ \\003\\ \\001\\ \\001\\ \\001\\ \\001\\ \\001\\ \\006\\ \\003\\ \\125\\ \\035\\ \\017\\ \\001\\ \\001\\ \\001\\ \\001\\ \\001\\ \\001\\ \\001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0001\\ \\0000$  $\label{eq:condition} $$ 377\004\004\003\002\001\206\060\035\006\003\125\035\016\004\026$ \004\024\316\303\112\271\231\125\362\270\333\140\277\251\176\275  $\label{eq:condition} $$ \frac{26\\265\\227\\066\\247\\326\\060\\015\\006\\011\\052\\206\\110\\206\\367\\015$ \001\001\013\005\000\003\202\001\001\000\312\245\125\214\343\310 \101\156\151\047\247\165\021\357\074\206\066\157\322\235\306\170  $\label{eq:condition} $$ \070\035\151\226\242\222\151\056\070\154\233\175\004\324\211\245 $$$ \261\061\067\212\311\041\314\253\154\315\213\034\232\326\277\110 \322\062\146\301\212\300\363\057\072\357\300\343\324\221\206\321 \120\343\003\333\163\167\157\112\071\123\355\336\046\307\265\175 \257\053\102\321\165\142\343\112\053\002\307\120\113\340\151\342 \226\154\016\104\146\020\104\217\255\005\353\370\171\254\246\033 \350\067\064\235\123\311\141\252\242\122\257\112\160\026\206\302  $\label{eq:condition} $$ \072\310\261\023\160\066\330\317\356\364\012\064\325\133\114\375 $$$ \007\234\242\272\331\001\162\134\363\115\301\335\016\261\034\015 \304\143\276\255\364\024\373\211\354\242\101\016\114\314\310\127 \100\320\156\003\252\315\014\216\211\231\231\154\360\074\060\257  $\label{eq:condition} $$ \070\337\157\274\243\276\051\040\047\253\164\377\023\042\170\336$ \227\122\125\036\203\265\124\040\003\356\256\300\117\126\336\067 \314\303\177\252\004\047\273\323\167\270\142\333\027\174\234\050 \042\023\163\154\317\046\365\212\051\347

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "DigiCert Assured ID Root G2"

```
# Serial Number:0b:93:1c:3a:d6:39:67:ea:67:23:bf:c3:af:9a:f4:4b
# Subject: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After: Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
7D:05:EB:B6:82:33:9F:8C:94:51:EE:09:4E:EB:FE:FA:79:53:A1:14:ED:B2:F4:49:49:49:45:2F:AB:7D:2F:C1:85
# Fingerprint (SHA1): A1:4B:48:D9:43:EE:0A:0E:40:90:4F:3C:E0:A4:C0:91:93:51:5D:3F
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "DigiCert Assured ID Root G2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\verb|241|113|110|331|103|356|012|016|100|220|117|074|340|244|300|221|
\223\121\135\077
END
CKA CERT MD5 HASH MULTILINE OCTAL
\222\070\271\370\143\044\202\145\054\127\063\346\376\201\217\235
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$
\label{eq:condition} $$ \025\06\003\006\003\125\004\012\023\014\104\151\147\151\103\145 $$
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157
\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151
\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040
\122\157\157\164\040\107\062
END
CKA SERIAL NUMBER MULTILINE OCTAL
\label{eq:condition} $$ \002\020\013\223\034\072\326\071\147\352\147\043\277\303\257\232 $$
\364\113
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "DigiCert Assured ID Root G3"
# Issuer: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:0b:a1:5a:fa:1d:df:a0:b5:49:44:af:cd:24:a0:6c:ec
# Subject: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After: Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
7E:37:CB:8B:4C:47:09:0C:AB:36:55:1B:A6:F4:5D:B8:40:68:0F:BA:16:6A:95:2D:B1:00:71:7F:43:05:3F:C2
```

# Issuer: CN=DigiCert Assured ID Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US

# Fingerprint (SHA1): F5:17:A2:4F:9A:48:C6:C9:F8:A2:00:26:9F:DC:0F:48:2C:AB:30:89

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "DigiCert Assured ID Root G3"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \00145\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061\044\060\042\006\003\125\004\003\023\033\104\151\147\151\103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040\122\157\157\164\040\107\063$ 

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00145\061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023\023\104\151\147\151\143\145\162\164\056\144\151\147\151\143\145\162\164\040\101\163\165\162\145\144\040\111\104\040\122\157\157\164\040\107\063$ 

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\013\241\132\372\035\337\240\265\111\104\257\315\044\240 \154\354

END

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\106\060\202\001\315\240\003\002\001\002\002\002\001\315 \241\132\372\035\337\240\265\111\104\257\315\044\240\154\354\060 \012\006\010\052\206\110\316\075\004\003\003\060\145\061\013\060 \011\006\003\125\004\006\023\002\125\123\061\025\060\023\006\003 \125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156 \143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056 \144\151\147\151\143\145\162\164\056\143\157\155\061\044\060\042  $\label{eq:condition} $$ \006\003\125\004\003\023\033\104\151\147\151\103\145\162\164\040 $$$ \107\063\060\036\027\015\061\063\060\070\060\061\061\062\060\060 \060\060\132\027\015\063\070\060\061\061\065\061\062\060\060\060 \060\132\060\145\061\013\060\011\006\003\125\004\006\023\002\125 \123\061\025\060\023\006\003\125\004\012\023\014\104\151\147\151 \103\145\162\164\040\111\156\143\061\031\060\027\006\003\125\004 \013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056 \143\157\155\061\044\060\042\006\003\125\004\003\023\033\104\151 \147\151\103\145\162\164\040\101\163\163\165\162\145\144\040\111

\104\040\122\157\157\164\040\107\063\060\166\060\020\006\007\052 \206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  $\\ \\004\\031\\347\\274\\254\\104\\145\\355\\315\\270\\077\\130\\373\\215\\261\\127$ \251\104\055\005\025\362\357\013\377\020\164\237\265\142\122\137 \146\176\037\345\334\033\105\171\013\314\306\123\012\235\215\135  $\label{eq:condition} $$ \002\331\251\131\336\002\132\366\225\052\016\215\070\112\212\111$ \306\274\306\003\070\007\137\125\332\176\011\156\342\177\136\320 \105\040\017\131\166\020\326\240\044\360\055\336\066\362\154\051  $\label{eq:condition} $$ \071\243\102\060\100\060\017\006\003\125\035\023\001\001\377\004 $$$ \005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377  $\label{eq:condition} $$ \024\313\320\275\251\341\230\005\121\241\115\067\242\203\171\316$$ \215\035\052\344\204\060\012\006\010\052\206\110\316\075\004\003  $\label{eq:condition} $$ \003\003\147\000\060\144\002\060\045\244\201\105\002\153\022\113$ \165\164\117\310\043\343\160\362\165\162\336\174\211\360\317\221 \162\141\236\136\020\222\131\126\271\203\307\020\347\070\351\130  $\\ \\ 046\\ \\ 066\\ \\ 175\\ \\ 325\\ \\ 344\\ \\ 064\\ \\ 206\\ \\ 071\\ \\ 002\\ \\ 060\\ \\ 174\\ \\ 066\\ \\ 123\\ \\ 360\\ \\ 060\\ \\ 345$ \142\143\072\231\342\266\243\073\233\064\372\036\332\020\222\161 \136\221\023\247\335\244\156\222\314\062\326\365\041\146\307\057 \352\226\143\152\145\105\222\225\001\264

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "DigiCert Assured ID Root G3"
- # Issuer: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Serial Number:0b:a1:5a:fa:1d:df:a0:b5:49:44:af:cd:24:a0:6c:ec
- # Subject: CN=DigiCert Assured ID Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Not Valid Before: Thu Aug 01 12:00:00 2013
- # Not Valid After: Fri Jan 15 12:00:00 2038
- # Fingerprint (SHA-256):

7E:37:CB:8B:4C:47:09:0C:AB:36:55:1B:A6:F4:5D:B8:40:68:0F:BA:16:6A:95:2D:B1:00:71:7F:43:05:3F:C2

# Fingerprint (SHA1): F5:17:A2:4F:9A:48:C6:C9:F8:A2:00:26:9F:DC:0F:48:2C:AB:30:89

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert Assured ID Root G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\365\027\242\117\232\110\306\311\370\242\000\046\237\334\017\110

 $\langle 054 \rangle 253 \rangle 060 \rangle 211$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\174\177\145\061\014\201\337\215\272\076\231\342\134\255\156\373

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$ 

\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145 \162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023 \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  $\label{eq:condition} $$ \frac{155}{061}\frac{044}{060}\frac{042}{006}\frac{125}{004}\frac{003}{023}\frac{33}{104}\frac{151}{147}\frac{151}{151}$ \103\145\162\164\040\101\163\163\165\162\145\144\040\111\104\040 \122\157\157\164\040\107\063 **END** CKA SERIAL NUMBER MULTILINE OCTAL \002\020\013\241\132\372\035\337\240\265\111\104\257\315\044\240 \154\354 **END** CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE # Certificate "DigiCert Global Root G2" # Issuer: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US # Serial Number:03:3a:f1:e6:a7:11:a9:a0:bb:28:64:b1:1d:09:fa:e5 # Subject: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US # Not Valid Before: Thu Aug 01 12:00:00 2013 # Not Valid After: Fri Jan 15 12:00:00 2038 # Fingerprint (SHA-256): CB:3C:CB:B7:60:31:E5:E0:13:8F:8D:D3:9A:23:F9:DE:47:FF:C3:5E:43:C1:14:4C:EA:27:D4:6A:5A:B1:CB:5F # Fingerprint (SHA1): DF:3C:24:F9:BF:D6:66:76:1B:26:80:73:FE:06:D1:CC:8D:4F:82:A4 CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE CKA TOKEN CK BBOOL CK TRUE CKA PRIVATE CK BBOOL CK FALSE CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE CKA LABEL UTF8 "DigiCert Global Root G2" CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509 CKA SUBJECT MULTILINE OCTAL \060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061 \025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145 \162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023 \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157  $\label{eq:condition} $$ \frac{155}{061}\frac{040}{060}\frac{036}{006}\frac{125}{004}\frac{03}{023}\frac{027}{104}\frac{151}{147}\frac{151}{151}$ \103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164 \040\107\062 **END** CKA\_ID UTF8 "0" CKA\_ISSUER MULTILINE\_OCTAL \060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061 \025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145 \162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023 \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157

\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151 \103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164 \040\107\062

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\003\072\361\346\247\021\251\240\273\050\144\261\035\011 \372\345

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\216\060\202\002\166\240\003\002\001\002\002\003 \072\361\346\247\021\251\240\273\050\144\261\035\011\372\345\060  $\label{eq:condition} $$ \0.015\0.06\0.011\0.052\2.06\1.10\2.06\3.67\0.15\0.01\0.01\0.01\0.013\0.05\0.00\0.060\1.41 $$$ \061\013\060\011\006\003\125\004\006\023\002\125\123\061\025\060  $\label{eq:condition} $$ \040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167 $$$ \167\167\056\144\151\147\151\143\145\162\164\056\143\157\155\061  $\\ \\040\\ \\006\\ \\003\\ \\003\\ \\125\\ \\004\\ \\003\\ \\023\\ \\027\\ \\104\\ \\151\\ \\147\\ \\151\\ \\103\\ \\145$ \162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\107 \062\060\036\027\015\061\063\060\070\060\061\061\062\060\060  $\label{eq:condition} $$ \060\132\027\015\063\070\060\061\061\065\061\062\060\060\060\060$ \132\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123 \061\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103 \023\020\167\167\167\056\144\151\147\151\143\145\162\164\056\143 \157\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147 \151\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157 \164\040\107\062\060\202\001\042\060\015\006\011\052\206\110\206  $\label{eq:condition} $$ \367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012$ \002\202\001\001\000\273\067\315\064\334\173\153\311\262\150\220 \255\112\165\377\106\272\041\012\010\215\365\031\124\311\373\210  $\label{eq:condition} $$ \33\363\256\362\072\211\221\074\172\346\253\006\032\153\317\254$$ \055\350\136\011\044\104\272\142\232\176\326\243\250\176\340\124 \165\040\005\254\120\267\234\143\032\154\060\334\332\037\031\261 \327\036\336\375\327\340\313\224\203\067\256\354\037\103\116\335 \173\054\322\275\056\245\057\344\251\270\255\072\324\231\244\266 \045\351\233\153\000\140\222\140\377\117\041\111\030\367\147\220 \253\141\006\234\217\362\272\351\264\351\222\062\153\265\363\127 \350\135\033\315\214\035\253\225\004\225\111\363\065\055\226\343  $\label{eq:condition} $$ \frac{111\15\335\167\343\373\111\113\264\254\125\007\251\217\225\263}{111\155\335\167\343\373\111\113\264\254\125\007\251\217\225\263}$ \264\043\273\114\155\105\360\366\251\262\225\060\264\375\114\125 \214\047\112\127\024\174\202\235\315\163\222\323\026\112\006\014 \214\120\321\217\036\011\276\027\241\346\041\312\375\203\345\020 \274\203\245\012\304\147\050\366\163\024\024\075\106\166\303\207 \024\211\041\064\115\257\017\105\014\246\111\241\272\273\234\305 \261\063\203\051\205\002\003\001\000\001\243\102\060\100\060\017 \006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060 \016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060 \035\006\003\125\035\016\004\026\004\024\116\042\124\040\030\225

\346\343\156\346\017\372\372\271\022\355\006\027\217\071\060\015 \006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001  $\label{eq:condition} $$ \001\000\140\147\050\224\157\016\110\143\353\061\335\352\147\030 $$$  $\label{eq:condition} $$ \frac{325}{211}175\\074\\305\\213\\112\\177\\351\\276\\333\\053\\027\\337\\260\\137$ \163\167\052\062\023\071\201\147\102\204\043\362\105\147\065\354 \210\277\370\217\260\141\014\064\244\256\040\114\204\306\333\370 \065\341\166\331\337\246\102\273\307\104\010\206\177\066\164\044 \132\332\154\015\024\131\065\275\362\111\335\266\037\311\263\015 \107\052\075\231\057\273\134\273\265\324\040\341\231\137\123\106 \025\333\150\233\360\363\060\325\076\061\342\215\204\236\343\212  $\label{eq:condition} $$ \32\32\226\076\065\023\245\137\360\371\160\120\160\107\101\021$ \127\031\116\300\217\256\006\304\225\023\027\057\033\045\237\165 \362\261\216\231\241\157\023\261\101\161\376\210\052\310\117\020 \040\125\327\363\024\105\345\340\104\364\352\207\225\062\223\016 \376\123\106\372\054\235\377\213\042\271\113\331\011\105\244\336 \244\270\232\130\335\033\175\122\237\216\131\103\210\201\244\236  $\\ \langle 046 \rangle 325 \rangle 157 \rangle 255 \rangle 335 \rangle 015 \rangle 306 \rangle 067 \rangle 175 \rangle 355 \rangle 003 \rangle 222 \rangle 033 \rangle 345 \rangle 167 \rangle 137 \rangle$ \166\356\074\215\304\135\126\133\242\331\146\156\263\065\067\345 \062\266

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "DigiCert Global Root G2"
- # Issuer: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Serial Number:03:3a:f1:e6:a7:11:a9:a0:bb:28:64:b1:1d:09:fa:e5
- # Subject: CN=DigiCert Global Root G2,OU=www.digicert.com,O=DigiCert Inc,C=US
- # Not Valid Before: Thu Aug 01 12:00:00 2013
- # Not Valid After: Fri Jan 15 12:00:00 2038
- # Fingerprint (SHA-256):

CB:3C:CB:B7:60:31:E5:E0:13:8F:8D:D3:9A:23:F9:DE:47:FF:C3:5E:43:C1:14:4C:EA:27:D4:6A:5A:B1:CB:5F

# Fingerprint (SHA1): DF:3C:24:F9:BF:D6:66:76:1B:26:80:73:FE:06:D1:CC:8D:4F:82:A4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

 $CKA\_MODIFIABLE\ CK\_BBOOL\ CK\_FALSE$ 

CKA\_LABEL UTF8 "DigiCert Global Root G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \frac{337}074\044\371\277\326\146\166\033\046\200\163\376\006\321\314\215\117\202\244$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 344\246\212\310\124\254\122\102\106\012\375\162\110\033\052\104$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061 \025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145

\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023 \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157 \155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151  $\label{eq:condition} $$ 103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164$$ \040\107\062 **END** CKA SERIAL NUMBER MULTILINE OCTAL  $\label{eq:condition} $$ \002\003\072\361\346\247\021\251\240\273\050\144\261\035\011 $$$ \372\345 **END** CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE # Certificate "DigiCert Global Root G3" # Issuer: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US # Serial Number:05:55:56:bc:f2:5e:a4:35:35:c3:a4:0f:d5:ab:45:72 # Subject: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US # Not Valid Before: Thu Aug 01 12:00:00 2013 # Not Valid After: Fri Jan 15 12:00:00 2038 # Fingerprint (SHA-256): 31:AD:66:48:F8:10:41:38:C7:38:F3:9E:A4:32:01:33:39:3E:3A:18:CC:02:29:6E:F9:7C:2A:C9:EF:67:31:D0 # Fingerprint (SHA1): 7E:04:DE:89:6A:3E:66:6D:00:E6:87:D3:3F:FA:D9:3B:E8:3D:34:9E CKA CLASS CK OBJECT CLASS CKO CERTIFICATE CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA PRIVATE CK BBOOL CK FALSE CKA MODIFIABLE CK BBOOL CK FALSE CKA\_LABEL UTF8 "DigiCert Global Root G3" CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509 CKA SUBJECT MULTILINE OCTAL \060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061 \025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145 \162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023 \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157 \155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151  $\label{eq:condition} $$ 103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164$$ \040\107\063 **END** CKA ID UTF8 "0" CKA\_ISSUER MULTILINE\_OCTAL \060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061 \025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145 \162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023 \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157 \155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151

\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164 \040\107\063

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\005\125\126\274\362\136\244\065\065\303\244\017\325\253 \105\162

**END** 

#### CKA VALUE MULTILINE OCTAL

\060\202\002\077\060\202\001\305\240\003\002\001\002\002\002\005 \125\126\274\362\136\244\065\065\303\244\017\325\253\105\162\060 \012\006\010\052\206\110\316\075\004\003\003\060\141\061\013\060 \125\004\012\023\014\104\151\147\151\103\145\162\164\040\111\156 \143\061\031\060\027\006\003\125\004\013\023\020\167\167\167\056 \144\151\147\151\143\145\162\164\056\143\157\155\061\040\060\036 \006\003\125\004\003\023\027\104\151\147\151\103\145\162\164\040  $\label{eq:condition} $$ 107\154\157\142\141\154\040\122\157\157\164\040\107\063\060\036$ \027\015\061\063\060\070\060\061\061\062\060\060\060\060\132\027 \015\063\070\060\061\061\065\061\062\060\060\060\060\060\132\060\141 \023\006\003\125\004\012\023\014\104\151\147\151\103\145\162\164 \040\111\156\143\061\031\060\027\006\003\125\004\013\023\020\167 \040\060\036\006\003\125\004\003\023\027\104\151\147\151\103\145 \162\164\040\107\154\157\142\141\154\040\122\157\157\164\040\107 \063\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005 \053\201\004\000\042\003\142\000\004\335\247\331\273\212\270\013  $\label{eq:condition} $$ \sqrt{373} \frac{177}{041} \frac{322}{360} \frac{276}{276} \frac{163}{363} \frac{363}{063} \frac{135}{032} \frac{274}{064} \frac{352}{360} \frac{163}{363} \frac{135}{032} \frac{135}{03$ \336\306\233\274\320\225\366\360\314\320\013\272\141\133\121\106 \176\236\055\237\356\216\143\014\027\354\007\160\365\317\204\056 \100\203\234\350\077\101\155\073\255\323\244\024\131\066\170\235 \003\103\356\020\023\154\162\336\256\210\247\241\153\265\103\316 \147\334\043\377\003\034\243\342\076\243\102\060\100\060\017\006 \003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016 \006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035 \006\003\125\035\016\004\026\004\024\263\333\110\244\371\241\305 \330\256\066\101\314\021\143\151\142\051\274\113\306\060\012\006 \010\052\206\110\316\075\004\003\003\003\150\000\060\145\002\061  $\label{eq:condition} $$ \000\255\274\362\154\077\022\112\321\055\071\303\012\011\227\163$ \364\210\066\214\210\047\273\346\210\215\120\205\247\143\371\236 \062\336\146\223\017\361\314\261\011\217\335\154\253\372\153\177 \240\002\060\071\146\133\302\144\215\270\236\120\334\250\325\111 \242\355\307\334\321\111\177\027\001\270\310\206\217\116\214\210 \053\250\232\251\212\305\321\000\275\370\124\342\232\345\133\174 \263\047\027

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "DigiCert Global Root G3"
# Issuer: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:05:55:56:bc:f2:5e:a4:35:35:c3:a4:0f:d5:ab:45:72
# Subject: CN=DigiCert Global Root G3,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
# Not Valid After: Fri Jan 15 12:00:00 2038
# Fingerprint (SHA-256):
31:AD:66:48:F8:10:41:38:C7:38:F3:9E:A4:32:01:33:39:3E:3A:18:CC:02:29:6E:F9:7C:2A:C9:EF:67:31:D0
# Fingerprint (SHA1): 7E:04:DE:89:6A:3E:66:6D:00:E6:87:D3:3F:FA:D9:3B:E8:3D:34:9E
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "DigiCert Global Root G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\176\004\336\211\152\076\146\155\000\346\207\323\077\372\331\073
\350\075\064\236
END
CKA CERT MD5 HASH MULTILINE OCTAL
\365\135\244\120\245\373\050\176\036\017\015\314\226\127\126\312
END
CKA ISSUER MULTILINE OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\label{eq:condition} $$ \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157 $$
\155\061\040\060\036\006\003\125\004\003\023\027\104\151\147\151
\103\145\162\164\040\107\154\157\142\141\154\040\122\157\157\164
\040\107\063
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\005\125\126\274\362\136\244\065\065\303\244\017\325\253
\105\162
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "DigiCert Trusted Root G4"
# Issuer: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US
# Serial Number:05:9b:1b:57:9e:8e:21:32:e2:39:07:bd:a7:77:75:5c
# Subject: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US
# Not Valid Before: Thu Aug 01 12:00:00 2013
```

# Not Valid After: Fri Jan 15 12:00:00 2038

# Fingerprint (SHA-256):

55:2F:7B:DC:F1:A7:AF:9E:6C:E6:72:01:7F:4F:12:AB:F7:72:40:C7:8E:76:1A:C2:03:D1:D9:D2:0A:C8:99:88

# Fingerprint (SHA1): DD:FB:16:CD:49:31:C9:73:A2:03:7D:3F:C8:3A:4D:7D:77:5D:05:E4

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "DigiCert Trusted Root G4"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000142\0013\006\003\125\004\0003\125\0004\0023\002\125\123\061\025\006\0023\006\003\125\0004\012\023\014\104\151\147\151\103\145\162\164\004\013\1023\023\023\003\125\0004\003\125\0004\003\125\0004\003\125\0004\003\125\164\162\164\000\122\157\157\164\004\107\064$$ 

**END** 

CKA\_ID UTF8 "0"

#### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000142\0013\006\003\125\004\0003\125\0004\0023\002\125\123\061\025\006\0023\006\003\125\0004\012\023\014\104\151\147\151\103\145\162\164\004\013\1023\023\023\003\125\0004\003\125\0004\003\125\0004\003\125\0004\003\125\164\162\164\000\122\157\157\164\004\107\064$$ 

**END** 

# CKA SERIAL NUMBER MULTILINE OCTAL

 $\label{eq:condition} $$ \002\020\005\233\033\127\236\216\041\062\342\071\007\275\247\167\165\134$ 

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:constraints} $$ \ensuremath{$\langle 060 \rangle 202 \rangle 005 \rangle 220 \rangle 060 \rangle 202 \rangle 003 \rangle 170 \rangle 240 \rangle 003 \rangle 002 \rangle 001 \rangle 002 \rangle 020 \rangle 005 \rangle 233 \rangle 033 \rangle 127 \rangle 236 \rangle 16 \rangle 041 \rangle 062 \rangle 342 \rangle 071 \rangle 007 \rangle 275 \rangle 247 \rangle 167 \rangle 165 \rangle 134 \rangle 060 \rangle 015 \rangle 006 \rangle 011 \rangle 052 \rangle 206 \rangle 110 \rangle 206 \rangle 367 \rangle 015 \rangle 001 \rangle 001 \rangle 014 \rangle 005 \rangle 000 \rangle 060 \rangle 142 \rangle 061 \rangle 013 \rangle 060 \rangle 011 \rangle 060 \rangle 003 \rangle 125 \rangle 004 \rangle 006 \rangle 023 \rangle 002 \rangle 125 \rangle 123 \rangle 061 \rangle 025 \rangle 060 \rangle 023 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 012 \rangle 023 \rangle 014 \rangle 104 \rangle 105 \rangle 016 \rangle 023 \rangle 006 \rangle 031 \rangle 125 \rangle 004 \rangle 013 \rangle 023 \rangle 020 \rangle 167 \rangle 167 \rangle 167 \rangle 056 \rangle 144 \rangle 151 \rangle 147 \rangle 151 \rangle 143 \rangle 145 \rangle 162 \rangle 164 \rangle 040 \rangle 124 \rangle 162 \rangle 165 \rangle 163 \rangle 164 \rangle 144 \rangle 151 \rangle 147 \rangle 151 \rangle 103 \rangle 145 \rangle 162 \rangle 164 \rangle 040 \rangle 124 \rangle 162 \rangle 165 \rangle 163 \rangle 164 \rangle 144 \rangle 144 \rangle 144 \rangle 144 \rangle 145 \rangle 164 \rangle 166 \rangle 060 \rangle 060 \rangle 060 \rangle 132 \rangle 027 \rangle 151 \rangle 063 \rangle 070 \rangle 060 \rangle 061 \rangle 065 \rangle 061 \rangle 062 \rangle 060 \rangle 060 \rangle 142 \rangle 061 \rangle 101 \rangle 060 \rangle 071 \rangle 063 \rangle 070 \rangle 060 \rangle 061 \rangle 065 \rangle 061 \rangle 062 \rangle 060 \rangle 060 \rangle 125 \rangle 060 \rangle 023 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 012 \rangle 023 \rangle 014 \rangle 104 \rangle 151 \rangle 147 \rangle 151 \rangle 103 \rangle 145 \rangle 162 \rangle 164 \rangle 040 \rangle 111 \rangle 156 \rangle 143 \rangle 061 \rangle 031 \rangle 060 \rangle 027 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 0027 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 000 \rangle 000 \rangle 125 \rangle 004 \rangle 000 \rangle 125 \rangle 004 \rangle 000 \rangle 125 \rangle 004 \rangle 000 \rangle 125 \rangle 006 \rangle 000 \rangle 125 \rangle 000 \rangle 000 \rangle 125 \rangle 125 \rangle 123 \rangle 126 \rangle 126 \rangle 126 \rangle 126 \rangle 126 \rangle 127 \rangle$ 

\013\023\020\167\167\167\056\144\151\147\151\143\145\162\164\056 \143\157\155\061\041\060\037\006\003\125\004\003\023\030\104\151 \147\151\103\145\162\164\040\124\162\165\163\164\145\144\040\122 \157\157\164\040\107\064\060\202\002\042\060\015\006\011\052\206 \110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  $\label{eq:condition} $$ \002\01\002\02\001\000\277\346\220\163\150\336\273\344\135 $$$ \112\074\060\042\060\151\063\354\302\247\045\056\311\041\075\362 \212\330\131\302\341\051\247\075\130\253\166\232\315\256\173\033 \204\015\304\060\037\363\033\244\070\026\353\126\306\227\155\035 \253\262\171\362\312\021\322\344\137\326\005\074\122\017\122\037  $\label{eq:condition} $$ 306 \times 236 \times 245 \times 176 \times 276 \times 237 \times 251 \times 127 \times 26 \times 131 \times 125 \times 162 \times 257 \times 150 \times 223 \times 126 \times$ \160\302\262\272\165\231\152\163\062\224\321\020\104\020\056\337 \202\363\007\204\346\164\073\155\161\342\055\014\033\356\040\325 \311\040\035\143\051\055\316\354\136\116\310\223\370\041\141\233 \064\353\005\306\136\354\133\032\274\353\311\317\315\254\064\100 \137\261\172\146\356\167\310\110\250\146\127\127\237\124\130\216  $\label{eq:condition} $$ \014\053\267\117\247\060\331\126\356\312\173\135\343\255\311\117$ \136\345\065\347\061\313\332\223\136\334\216\217\200\332\266\221 \230\100\220\171\303\170\307\266\261\304\265\152\030\070\003\020 \215\330\324\067\244\056\005\175\210\365\202\076\020\221\160\253 \125\202\101\062\327\333\004\163\052\156\221\001\174\041\114\324 \274\256\033\003\165\135\170\146\331\072\061\104\232\063\100\277  $\label{eq:condition} $$ \010\327\132\111\244\302\346\251\240\147\335\244\047\274\241\117$ \071\265\021\130\027\367\044\134\106\217\144\367\301\151\210\166 \230\166\075\131\135\102\166\207\211\227\151\172\110\360\340\242 \022\033\146\232\164\312\336\113\036\347\016\143\256\346\324\357 \222\222\072\236\075\334\000\344\105\045\211\266\232\104\031\053 \176\300\224\264\322\141\155\353\063\331\305\337\113\004\000\314 \175\034\225\303\217\367\041\262\262\021\267\273\177\362\325\214 \160\054\101\140\252\261\143\030\104\225\032\166\142\176\366\200 \260\373\350\144\246\063\321\211\007\341\275\267\346\103\244\030 \270\246\167\001\341\017\224\014\041\035\262\124\051\045\211\154 \345\016\122\121\107\164\276\046\254\266\101\165\336\172\254\137 \215\077\311\274\323\101\021\022\133\345\020\120\353\061\305\312 \162\026\042\011\337\174\114\165\077\143\354\041\137\304\040\121 \153\157\261\253\206\213\117\302\326\105\137\235\040\374\241\036 \305\300\217\242\261\176\012\046\231\365\344\151\057\230\035\055 \365\331\251\262\035\345\033\002\003\001\000\001\243\102\060\100  $\label{eq:condition} $$ \000\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001 $$$ \377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001 \206\060\035\006\003\125\035\016\004\026\004\024\354\327\343\202 \322\161\135\144\114\337\056\147\077\347\272\230\256\034\017\117 \060\015\006\011\052\206\110\206\367\015\001\001\014\005\000\003 \202\002\001\000\273\141\331\175\251\154\276\027\304\221\033\303 \241\242\000\215\343\144\150\017\126\317\167\256\160\371\375\232 \112\231\271\311\170\134\014\014\137\344\346\024\051\126\013\066 \155\153\326\124\370\322\074\301\103\100\256\035\120\365\122\374

\220\073\273\230\231\151\153\307\301\247\250\150\244\047\334\235 \371\047\256\060\205\271\366\147\115\072\076\217\131\071\042\123 \104\353\310\135\003\312\355\120\172\175\142\041\012\200\310\163 \146\321\240\005\140\137\350\245\264\247\257\250\367\155\065\234 \174\132\212\326\242\070\231\363\170\213\364\115\322\040\013\336  $\label{eq:condition} $$ \004\356\214\233\107\201\162\015\300\024\062\357\060\131\056\256$ \340\161\362\126\344\152\227\157\222\120\155\226\215\150\172\232 \262\066\024\172\006\362\044\271\011\021\120\327\010\261\270\211 \172\204\043\141\102\051\345\243\315\242\040\101\327\321\234\144 \331\352\046\241\213\024\327\114\031\262\120\101\161\075\077\115  $\label{eq:condition} $$ 160\043\206\014\112\334\201\322\314\062\224\204\015\010\011\227 $$$  $\label{eq:condition} $$ \034\17\300\356\153\040\164\060\322\340\071\064\020\205\041\025$ \001\010\350\125\062\336\161\111\331\050\027\120\115\346\276\115 \321\165\254\320\312\373\101\270\103\245\252\323\303\005\104\117  $\label{eq:condition} $$ \054\066\233\342\372\342\105\270\043\123\154\006\157\147\125\177$ \106\265\114\077\156\050\132\171\046\322\244\250\142\227\322\036  $\label{eq:condition} $$ \frac{342\355\112\213\274\033\375\107\112\015\337\147\146\176\262\133}{342\355\112\213\274\033\375\107\112\015\337\147\146\176\262\133}$ \101\320\073\344\364\073\364\004\143\351\357\302\124\000\121\240 \212\052\311\316\170\314\325\352\207\004\030\263\316\257\111\210 \257\363\222\231\266\263\346\141\017\322\205\000\347\120\032\344 \033\225\235\031\241\271\234\261\233\261\000\036\357\320\017\117  $\label{eq:condition} $$ 102\154\311\012\274\356\103\372\072\161\245\310\115\046\245\065$$  $\label{eq:condition} $$ \frac{375}{211}135\frac{274}{205}142\frac{35}{062}\frac{322}{240}053\frac{124}{355}\frac{232}{127}301 $$ \333\372\020\317\031\267\213\112\033\217\001\266\047\225\123\350 \266\211\155\133\274\150\324\043\350\213\121\242\126\371\360\246 \200\240\326\036\263\274\017\017\123\165\051\252\352\023\167\344  $\label{eq:condition} $$ 36\214\201\041\255\007\020\107\021\255\207\075\007\321\165\274$$ \317\363\146\176

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "DigiCert Trusted Root G4"
```

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert Trusted Root G4"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

<sup>#</sup> Issuer: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US

<sup>#</sup> Serial Number:05:9b:1b:57:9e:8e:21:32:e2:39:07:bd:a7:77:75:5c

<sup>#</sup> Subject: CN=DigiCert Trusted Root G4,OU=www.digicert.com,O=DigiCert Inc,C=US

<sup>#</sup> Not Valid Before: Thu Aug 01 12:00:00 2013

<sup>#</sup> Not Valid After: Fri Jan 15 12:00:00 2038

<sup>#</sup> Fingerprint (SHA-256):

<sup>55:2</sup>F:7B:DC:F1:A7:AF:9E:6C:E6:72:01:7F:4F:12:AB:F7:72:40:C7:8E:76:1A:C2:03:D1:D9:D2:0A:C8:99:88

<sup>#</sup> Fingerprint (SHA1): DD:FB:16:CD:49:31:C9:73:A2:03:7D:3F:C8:3A:4D:7D:77:5D:05:E4

```
\335\373\026\315\111\061\311\163\242\003\175\077\310\072\115\175
\167\135\005\344
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\label{eq:condition} $$ 170\362\374\252\140\037\057\264\353\311\067\272\123\056\165\111 $$
END
CKA ISSUER MULTILINE OCTAL
\060\142\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\025\060\023\006\003\125\004\012\023\014\104\151\147\151\103\145
\162\164\040\111\156\143\061\031\060\027\006\003\125\004\013\023
\label{eq:condition} $$ \020\167\167\167\056\144\151\147\151\143\145\162\164\056\143\157 $$
\label{eq:condition} $$ \frac{155}{061}\frac{041}{060}\frac{037}{006}\frac{125}{004}\frac{03}{023}\frac{030}{104}\frac{151}{147}\frac{151}{151} 
\103\145\162\164\040\124\162\165\163\164\145\144\040\122\157\157
\164\040\107\064
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\005\233\033\127\236\216\041\062\342\071\007\275\247\167
\165\134
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "COMODO RSA Certification Authority"
# Issuer: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester.C=GB
# Serial Number:4c:aa:f9:ca:db:63:6f:e0:1f:f7:4e:d8:5b:03:86:9d
# Subject: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater
Manchester.C=GB
# Not Valid Before: Tue Jan 19 00:00:00 2010
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (SHA-256):
52:F0:E1:C4:E5:8E:C6:29:29:1B:60:31:7F:07:46:71:B8:5D:7E:A8:0D:5B:07:27:34:63:53:4B:32:B4:02:34
# Fingerprint (SHA1): AF:E5:D2:44:A8:D1:19:42:30:FF:47:9F:E2:F8:97:BB:CD:7A:8C:B4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "COMODO RSA Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\061\033\060\031\006\003\125\004\010\023\022\107\162\145\141\164
\145\162\040\115\141\156\143\150\145\163\164\145\162\061\020\060
\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061
```

 $\label{eq:control_loss} $$ \032\060\030\06\003\125\004\012\023\021\103\117\115\117\104\117\040\103\101\040\114\151\155\151\164\145\144\061\053\060\051\006\003\125\004\003\023\042\103\117\115\117\104\117\040\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171$ 

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\201\205\061\013\060\011\006\003\125\004\010\023\022\107\162\145\141\164\145\162\060\031\25\004\010\125\163\164\145\162\061\020\060\003\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060\030\006\003\125\004\0012\023\021\103\117\115\117\104\117\040\113\101\040\114\151\155\151\164\145\144\061\053\060\051\006\003\125\004\003\023\042\103\117\115\117\104\117\040\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\157\162\151\164\171$ 

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

 $\label{eq:condition} $$ \002\020\114\252\371\312\333\143\157\340\037\367\116\330\133\003\206\235$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\330\060\202\003\300\240\003\002\001\002\002\020\114 \252\371\312\333\143\157\340\037\367\116\330\133\003\206\235\060 \015\006\011\052\206\110\206\367\015\001\001\001\014\005\000\060\201 \205\061\013\060\011\006\003\125\004\006\023\002\107\102\061\033  $\label{eq:condition} $$ \000\031\006\003\125\004\010\023\022\107\162\145\141\164\145\162$ \040\115\141\156\143\150\145\163\164\145\162\061\020\060\016\006 \003\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060  $\label{eq:condition} $$ \0000003\125\004\012\023\021\103\117\115\117\104\117\040\103$ \101\040\114\151\155\151\164\145\144\061\053\060\051\006\003\125 \004\003\023\042\103\117\115\117\104\117\040\122\123\101\040\103 \145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164 \150\157\162\151\164\171\060\036\027\015\061\060\060\061\061\071 \060\060\060\060\060\060\060\132\027\015\063\070\060\061\061\070\062 \063\065\071\065\071\132\060\201\205\061\013\060\011\006\003\125  $\label{eq:condition} $$ \004\006\023\002\107\102\061\033\060\031\006\003\125\004\010\023$  $\label{eq:condition} $$ \022\107\162\145\141\164\145\162\040\115\141\156\143\150\145\163$$ \154\146\157\162\144\061\032\060\030\006\003\125\004\012\023\021 \103\117\115\117\104\117\040\103\101\040\114\151\155\151\164\145 \144\061\053\060\051\006\003\125\004\003\023\042\103\117\115\117 \104\117\040\122\123\101\040\103\145\162\164\151\146\151\143\141 \164\151\157\156\040\101\165\164\150\157\162\151\164\171\060\202 \002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  $\label{eq:condition} $$ \000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\221 $$$ \350\124\222\322\012\126\261\254\015\044\335\305\317\104\147\164

\231\053\067\243\175\043\160\000\161\274\123\337\304\372\052\022 \217\113\177\020\126\275\237\160\162\267\141\177\311\113\017\027 \247\075\343\260\004\141\356\377\021\227\307\364\206\076\012\372 \076\134\371\223\346\064\172\331\024\153\347\234\263\205\240\202 \172\166\257\161\220\327\354\375\015\372\234\154\372\337\260\202  $\label{eq:condition} $$ \364\024\176\371\276\304\246\057\117\177\231\177\265\374\147\103$ \162\275\014\000\326\211\353\153\054\323\355\217\230\034\024\253 \176\345\343\156\374\330\250\344\222\044\332\103\153\142\270\125 \375\352\301\274\154\266\213\363\016\215\232\344\233\154\151\231 \370\170\110\060\105\325\255\341\015\074\105\140\374\062\226\121 \047\274\147\303\312\056\266\153\352\106\307\307\040\240\261\037 \145\336\110\010\272\244\116\251\362\203\106\067\204\353\350\314 \201\110\103\147\116\162\052\233\134\275\114\033\050\212\134\042 \173\264\253\230\331\356\340\121\203\303\011\106\116\155\076\231 \372\225\027\332\174\063\127\101\074\215\121\355\013\266\134\257 \054\143\032\337\127\310\077\274\351\135\304\233\257\105\231\342 \243\132\044\264\272\251\126\075\317\157\252\377\111\130\276\360 \250\377\364\270\255\351\067\373\272\270\364\013\072\371\350\103 \102\036\211\330\204\313\023\361\331\273\341\211\140\270\214\050 \126\254\024\035\234\012\347\161\353\317\016\335\075\251\226\241 \110\275\074\367\257\265\015\042\114\300\021\201\354\126\073\366 \323\242\342\133\267\262\004\042\122\225\200\223\151\350\216\114  $\label{eq:condition} $$ \frac{145}{361} 221 \\003 \\055 \\160 \\164 \\002 \\352 \\213 \\147 \\025 \\051 \\151 \\122 \\002$ \273\327\337\120\152\125\106\277\240\243\050\141\177\160\320\303 \242\252\054\041\252\107\316\050\234\006\105\166\277\202\030\047 \264\325\256\264\313\120\346\153\364\114\206\161\060\351\246\337 \026\206\340\330\377\100\335\373\320\102\210\177\243\063\072\056 \134\036\101\021\201\143\316\030\161\153\053\354\246\212\267\061 \134\072\152\107\340\303\171\131\326\040\032\257\362\152\230\252 \162\274\127\112\322\113\235\273\020\374\260\114\101\345\355\035  $\label{eq:condition} $$ \050\235\234\314\277\263\121\332\247\107\345\204\123\002$ \003\001\000\001\243\102\060\100\060\035\006\003\125\035\016\004 \026\004\024\273\257\176\002\075\372\246\361\074\204\216\255\356 \070\230\354\331\062\062\324\060\016\006\003\125\035\017\001\001 \377\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001  $\label{eq:condition} $$ 377\004\005\060\003\001\001\377\060\015\006\011\052\206\110\206$ \367\015\001\001\001\014\005\000\003\202\002\001\000\012\361\325\106  $\label{eq:condition} $$ \204\267\256\121\273\154\262\115\101\024\000\223\114\234\313\345$$ \300\124\317\240\045\216\002\371\375\260\242\015\365\040\230\074  $\label{eq:condition} $$ \023\055\254\126\242\260\326\176\021\222\351\056\272\236\056\232$ \162\261\275\031\104\154\141\065\242\232\264\026\022\151\132\214 \341\327\076\244\032\350\057\003\364\256\141\035\020\033\052\244 \213\172\305\376\005\246\341\300\326\310\376\236\256\217\053\272 \075\231\370\330\163\011\130\106\156\246\234\364\327\047\323\225 \332\067\203\162\034\323\163\340\242\107\231\003\070\135\325\111 \171\000\051\034\307\354\233\040\034\007\044\151\127\170\262\071 \374\072\204\240\265\234\174\215\277\056\223\142\047\267\071\332 \027\030\256\275\074\011\150\377\204\233\074\325\326\013\003\343

\127\236\024\367\321\353\117\310\275\207\043\267\266\111\103\171 \205\134\272\353\222\013\241\306\350\150\250\114\026\261\032\231 \012\350\123\054\222\273\241\011\030\165\014\145\250\173\313\043 \267\032\302\050\205\303\033\377\320\053\142\357\244\173\011\221 \230\147\214\024\001\315\150\006\152\143\041\165\003\200\210\212 \156\201\306\205\362\251\244\055\347\364\245\044\020\107\203\312 \315\364\215\171\130\261\006\233\347\032\052\331\235\001\327\224 \175\355\003\112\312\360\333\350\251\001\076\365\126\231\311\036 \216\111\075\273\345\011\271\340\117\111\222\075\026\202\100\314 \314\131\306\346\072\355\022\056\151\074\154\225\261\375\252\035  $\label{eq:condition} $$ \frac{173}177\206\276\036\016\062\106\373\373\023\217\165\177\114\213}{190} $$$ \113\106\143\376\000\064\100\160\301\303\271\241\335\246\160\342 \004\263\101\274\351\200\221\352\144\234\172\341\042\003\251\234  $\label{eq:condition} $$ \frac{156}{157}016\frac{145}{117}\frac{4207}{207}\frac{36}{363}\frac{363}{156}\frac{240}{371}\frac{165}{245}\frac{233}{233} $$$ \100\350\123\262\047\235\112\271\300\167\041\215\377\207\362\336 \274\214\357\027\337\267\111\013\321\362\156\060\013\032\016\116  $\label{eq:condition} $$ 166\355\021\374\365\351\126\262\175\277\307\155\012\223\214\245$ \320\300\266\035\276\072\116\224\242\327\156\154\013\302\212\174 \372\040\363\304\344\345\315\015\250\313\221\222\261\174\205\354 \265\024\151\146\016\202\347\315\316\310\055\246\121\177\041\301 \065\123\205\006\112\135\237\255\273\033\137\164

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "COMODO RSA Certification Authority"
- # Issuer: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB
- # Serial Number:4c:aa:f9:ca:db:63:6f:e0:1f:f7:4e:d8:5b:03:86:9d
- # Subject: CN=COMODO RSA Certification Authority,O=COMODO CA Limited,L=Salford,ST=Greater Manchester,C=GB
- # Not Valid Before: Tue Jan 19 00:00:00 2010
- # Not Valid After: Mon Jan 18 23:59:59 2038
- # Fingerprint (SHA-256):
- 52:F0:E1:C4:E5:8E:C6:29:29:1B:60:31:7F:07:46:71:B8:5D:7E:A8:0D:5B:07:27:34:63:53:4B:32:B4:02:34
- # Fingerprint (SHA1): AF:E5:D2:44:A8:D1:19:42:30:FF:47:9F:E2:F8:97:BB:CD:7A:8C:B4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

 $CKA\_PRIVATE\ CK\_BBOOL\ CK\_FALSE$ 

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "COMODO RSA Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \257\345\322\104\250\321\031\102\060\377\107\237\342\370\227\273$ 

\315\172\214\264

**END** 

 ${\sf CKA\_CERT\_MD5\_HASH\ MULTILINE\_OCTAL}$ 

\033\061\260\161\100\066\314\024\066\221\255\304\076\375\354\030

```
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\205\061\013\060\011\006\003
```

 $\label{eq:condition} $$ \000\201\205\061\013\060\011\006\003\125\004\010\023\022\107\162\145\141\164\145\162\060\031\125\004\010\123\141\154\145\162\061\020\060\016\006\003\125\004\007\023\007\123\141\154\146\157\162\144\061\032\060\030\006\003\125\004\012\0223\021\103\117\115\117\104\117\040\113\101\040\114\151\155\151\164\145\144\061\053\060\051\006\003\125\004\003\023\042\103\117\115\117\104\117\040\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171$ 

END

CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\114\252\371\312\333\143\157\340\037\367\116\330\133\003 \206\235

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "USERTrust RSA Certification Authority"

#

# Issuer: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Serial Number:01:fd:6d:30:fc:a3:ca:51:a8:1b:bc:64:0e:35:03:2d

# Subject: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Not Valid Before: Mon Feb 01 00:00:00 2010

# Not Valid After: Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

E7:93:C9:B0:2F:D8:AA:13:E2:1C:31:22:8A:CC:B0:81:19:64:3B:74:9C:89:89:64:B1:74:6D:46:C3:D4:CB:D2

# Fingerprint (SHA1): 2B:8F:1B:57:33:0D:BB:A2:D0:7A:6C:51:F7:0E:E9:0D:DA:B9:AD:8E

 ${\tt CKA\_CLASS\ CK\_OBJECT\_CLASS\ CKO\_CERTIFICATE}$ 

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "USERTrust RSA Certification Authority"

 ${\tt CKA\_CERTIFICATE\_TYPE\ CK\_CERTIFICATE\_TYPE\ CKC\_X\_509}$ 

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123$ 

\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112

\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122

\122\123\101\040\103\145\162\164\151\146\151\143\141\164\151\157\\156\040\101\165\164\150\157\162\151\164\171

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\001\375\155\060\374\243\312\121\250\033\274\144\016\065 \003\055

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\336\060\202\003\306\240\003\002\001\002\002\002\001 \375\155\060\374\243\312\121\250\033\274\144\016\065\003\055\060  $\label{eq:condition} $$ \015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\201 $$$ \210\061\013\060\011\006\003\125\004\006\023\002\125\123\061\023 \060\021\006\003\125\004\010\023\012\116\145\167\040\112\145\162 \163\145\171\061\024\060\022\006\003\125\004\007\023\013\112\145 \162\163\145\171\040\103\151\164\171\061\036\060\034\006\003\125 \004\012\023\025\124\150\145\040\125\123\105\122\124\122\125\123 \124\040\116\145\164\167\157\162\153\061\056\060\054\006\003\125 \004\003\023\045\125\123\105\122\124\162\165\163\164\040\122\123  $\label{eq:condition} $$ 101\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040 $$$ \101\165\164\150\157\162\151\164\171\060\036\027\015\061\060\060 \062\060\061\060\060\060\060\060\060\132\027\015\063\070\060\061 \061\070\062\063\065\071\065\071\132\060\201\210\061\013\060\011 \006\003\125\004\006\023\002\125\123\061\023\060\021\006\003\125 \004\010\023\012\116\145\167\040\112\145\162\163\145\171\061\024 \060\022\006\003\125\004\007\023\013\112\145\162\163\145\171\040 \103\151\164\171\061\036\060\034\006\003\125\004\012\023\025\124 \167\157\162\153\061\056\060\054\006\003\125\004\003\023\045\125 \123\105\122\124\162\165\163\164\040\122\123\101\040\103\145\162 \164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157 \162\151\164\171\060\202\002\042\060\015\006\011\052\206\110\206 \367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012 \002\202\002\001\000\200\022\145\027\066\016\303\333\010\263\320 \254\127\015\166\355\315\047\323\114\255\120\203\141\342\252\040 \115\011\055\144\011\334\316\211\237\314\075\251\354\366\317\301 \334\361\323\261\326\173\067\050\021\053\107\332\071\306\274\072

\031\264\137\246\275\175\235\243\143\102\266\166\362\251\073\053 \221\370\342\157\320\354\026\040\220\011\076\342\350\164\311\030 \264\221\324\142\144\333\177\243\006\361\210\030\152\220\042\074 \274\376\023\360\207\024\173\366\344\037\216\324\344\121\306\021 \147\106\010\121\313\206\024\124\077\274\063\376\176\154\234\377  $\label{eq:condition} $$ \026\235\030\275\121\216\065\246\247\146\310\162\147\333\041\146$ \261\324\233\170\003\300\120\072\350\314\360\334\274\236\114\376 \257\005\226\065\037\127\132\267\377\316\371\075\267\054\266\366  $\label{eq:condition} $$ 124\335\310\347\022\072\115\256\114\212\267\134\232\264\267\040 $$$ \075\312\177\042\064\256\176\073\150\146\001\104\347\001\116\106  $\label{eq:condition} $$ 123\233\063\140\367\224\276\123\067\220\163\103\363\062\303\123$ \357\333\252\376\164\116\151\307\153\214\140\223\336\304\307\014 \337\341\062\256\314\223\073\121\170\225\147\213\356\075\126\376  $\label{eq:condition} $$ \014\320\151\017\033\017\363\045\046\153\063\155\367\156\107\372 $$$ \015\301\223\124\060\031\023\254\323\175\067\247\353\135\072\154  $\label{eq:condition} $$ \065\134\333\101\327\022\332\251\111\013\337\330\200\212\011\223$ \142\216\265\146\317\045\210\315\204\270\261\077\244\071\017\331 \002\236\353\022\114\225\174\363\153\005\251\136\026\203\314\270 \147\342\350\023\235\314\133\202\323\114\263\355\133\377\336\345 \163\254\043\073\055\000\277\065\125\164\011\111\330\111\130\032 \177\222\066\346\121\222\016\363\046\175\034\115\027\274\311\354  $\label{eq:condition} $$ 103\046\320\277\101\137\100\251\104\104\364\231\347\127\207\236$ \120\037\127\124\250\076\375\164\143\057\261\120\145\011\346\130 \102\056\103\032\114\264\360\045\107\131\372\004\036\223\324\046 \106\112\120\201\262\336\276\170\267\374\147\025\341\311\127\204 \036\017\143\326\351\142\272\326\137\125\056\352\134\306\050\010  $\label{eq:condition} $$ \004\045\071\270\016\053\251\362\114\227\034\007\077\015\122\365 $$$ \355\357\057\202\017\002\003\001\000\001\243\102\060\100\060\035 \006\003\125\035\016\004\026\004\024\123\171\277\132\252\053\112 \317\124\200\341\330\233\300\235\362\262\003\146\313\060\016\006 \003\125\035\017\001\001\377\004\004\003\002\001\006\060\017\006 \003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\015 \006\011\052\206\110\206\367\015\001\001\014\005\000\003\202\002 \001\000\134\324\174\015\317\367\001\175\101\231\145\014\163\305 \122\237\313\370\317\231\006\177\033\332\103\025\237\236\002\125 \127\226\024\361\122\074\047\207\224\050\355\037\072\001\067\242  $\label{eq:condition} $$ 166\374\123\120\300\204\233\306\153\116\272\214\041\117\242\216$ \125\142\221\363\151\025\330\274\210\343\304\252\013\375\357\250 \351\113\125\052\006\040\155\125\170\051\031\356\137\060\134\113 \044\021\125\377\044\232\156\136\052\053\356\013\115\237\177\367  $\label{eq:condition} $$ \001\070\224\024\225\103\007\011\373\140\251\356\034\253\022\214 $$$ \240\232\136\247\230\152\131\155\213\077\010\373\310\321\105\257 \030\025\144\220\022\017\163\050\056\305\342\044\116\374\130\354 \360\364\105\376\042\263\353\057\216\322\331\105\141\005\301\227 \157\250\166\162\217\213\214\066\257\277\015\005\316\161\215\346 \246\157\037\154\246\161\142\305\330\320\203\162\014\361\147\021 \211\014\234\023\114\162\064\337\274\325\161\337\252\161\335\341

\271\154\214\074\022\135\145\332\275\127\022\266\103\153\377\345 \336\115\146\021\121\317\231\256\354\027\266\350\161\221\214\336 \111\376\335\065\161\242\025\047\224\034\317\141\343\046\273\157 \243\147\045\041\135\346\335\035\013\056\150\033\073\202\257\354  $\label{eq:condition} $$ \203\147\205\324\230\121\164\261\271\231\200\211\377\177\170\031 $$$ \134\171\112\140\056\222\100\256\114\067\052\054\311\307\142\310 \016\135\367\066\133\312\340\045\045\001\264\335\032\007\234\167  $\label{eq:condition} $$ \000\077\320\334\325\354\075\324\372\273\077\314\205\326\157\177$ \251\055\337\271\002\367\365\227\232\265\065\332\303\147\260\207 \112\251\050\236\043\216\377\134\047\153\341\260\117\363\007\356 \000\056\324\131\207\313\122\101\225\352\364\107\327\356\144\101 \125\174\215\131\002\225\335\142\235\302\271\356\132\050\164\204 \245\233\267\220\307\014\007\337\365\211\066\164\062\326\050\301 \260\260\013\340\234\114\303\034\326\374\343\151\265\107\106\201  $\label{eq:condition} $$ \057\242\202\253\323\143\104\160\304\215\377\055\063\272\255\217 $$$ \173\265\160\210\256\076\031\317\100\050\330\374\310\220\273\135 \231\042\365\122\346\130\305\037\210\061\103\356\210\035\327\306 \216\074\103\152\035\247\030\336\175\075\026\361\142\371\312\220 \250\375

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "USERTrust RSA Certification Authority"

# Issuer: CN=USERTrust RSA Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US

# Serial Number:01:fd:6d:30:fc:a3:ca:51:a8:1b:bc:64:0e:35:03:2d

 ${\tt\#Subject: CN=USERTrust\ RSA\ Certification\ Authority, O=The\ USERTRUST\ Network, L=Jersey\ City, ST=New\ Jersey, C=US}$ 

# Not Valid Before: Mon Feb 01 00:00:00 2010

# Not Valid After: Mon Jan 18 23:59:59 2038

# Fingerprint (SHA-256):

E7:93:C9:B0:2F:D8:AA:13:E2:1C:31:22:8A:CC:B0:81:19:64:3B:74:9C:89:89:64:B1:74:6D:46:C3:D4:CB:D2

# Fingerprint (SHA1): 2B:8F:1B:57:33:0D:BB:A2:D0:7A:6C:51:F7:0E:E9:0D:DA:B9:AD:8E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "USERTrust RSA Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\053\217\033\127\063\015\273\242\320\172\154\121\367\016\351\015\332\271\255\216

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \033\376\151\321\221\267\031\063\243\162\250\017\341\125\345\265 $$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\label{eq:condition} $$ \002\020\001\375\155\060\374\243\312\121\250\033\274\144\016\065$
\003\055
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "USERTrust ECC Certification Authority"
# Issuer: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New
Jersey, C=US
# Serial Number:5c:8b:99:c5:5a:94:c5:d2:71:56:de:cd:89:80:cc:26
# Subject: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New
Jersey, C=US
# Not Valid Before: Mon Feb 01 00:00:00 2010
# Not Valid After: Mon Jan 18 23:59:59 2038
# Fingerprint (SHA-256):
4F:F4:60:D5:4B:9C:86:DA:BF:BC:FC:57:12:E0:40:0D:2B:ED:3F:BC:4D:4F:BD:AA:86:E0:6A:DC:D2:A9:AD:7A
# Fingerprint (SHA1): D1:CB:CA:5D:B2:D5:2A:7F:69:3B:67:4D:E5:F0:5A:1D:0C:95:7D:F0
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "USERTrust ECC Certification Authority"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\023\060\021\006\003\125\004\010\023\012\116\145\167\040\112
\145\162\163\145\171\061\024\060\022\006\003\125\004\007\023\013
\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006
\003\125\004\012\023\025\124\150\145\040\125\123\105\122\124\122
\125\123\124\040\116\145\164\167\157\162\153\061\056\060\054\006
\003\125\004\003\023\045\125\123\105\122\124\162\165\163\164\040
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
```

**END** 

#### CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\134\213\231\305\132\224\305\322\161\126\336\315\211\200 \314\046

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\217\060\202\002\025\240\003\002\001\002\002\020\134 \213\231\305\132\224\305\322\161\126\336\315\211\200\314\046\060 \012\006\010\052\206\110\316\075\004\003\003\060\201\210\061\013 \060\011\006\003\125\004\006\023\002\125\123\061\023\060\021\006  $\label{eq:condition} $$ \003\125\004\010\023\012\116\145\167\040\112\145\162\163\145\171 $$$ \061\024\060\022\006\003\125\004\007\023\013\112\145\162\163\145 \171\040\103\151\164\171\061\036\060\034\006\003\125\004\012\023 \025\124\150\145\040\125\123\105\122\124\122\125\123\124\040\116 \145\164\167\157\162\153\061\056\060\054\006\003\125\004\003\023 \045\125\123\105\122\124\162\165\163\164\040\105\103\103\040\103 \145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164 \150\157\162\151\164\171\060\036\027\015\061\060\060\062\060\061  $\label{eq:condition} $$ \0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.0$ \063\065\071\065\071\132\060\201\210\061\013\060\011\006\003\125 \004\006\023\002\125\123\061\023\060\021\006\003\125\004\010\023 \012\116\145\167\040\112\145\162\163\145\171\061\024\060\022\006 \003\125\004\007\023\013\112\145\162\163\145\171\040\103\151\164 \171\061\036\060\034\006\003\125\004\012\023\025\124\150\145\040 \125\123\105\122\124\122\125\123\124\040\116\145\164\167\157\162 \153\061\056\060\054\006\003\125\004\003\023\045\125\123\105\122 \151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164 \171\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005 \053\201\004\000\042\003\142\000\004\032\254\124\132\251\371\150 \043\347\172\325\044\157\123\306\132\330\113\253\306\325\266\321 \346\163\161\256\335\234\326\014\141\375\333\240\211\003\270\005 \024\354\127\316\356\135\077\342\041\263\316\367\324\212\171\340 \243\203\176\055\227\320\141\304\361\231\334\045\221\143\253\177 \060\243\264\160\342\307\241\063\234\363\277\056\134\123\261\137 \263\175\062\177\212\064\343\171\171\243\102\060\100\060\035\006

 $\label{eq:constraint} $$ \03125\035\016\004\026\004\024\072\341\011\206\324\317\031\302\226\166\164\111\166\334\340\065\306\143\143\232\060\016\0006\003\125\035\017\0001\031\377\004\0005\060\003\0001\0001\377\060\012\006\010\052\206\110\316\075\0004\003\003\003\150\0000\060\145\002\060\066\147\241\026\010\334\344\227\000\101\035\116\276\341\143\001\317\073\252\102\021\144\240\235\224\071\002\021\171\134\173\035\372\144\271\356\026\102\263\277\212\302\011\304\354\344\261\115\002\061\000\351\052\141\107\214\122\112\113\116\030\160\366\326\104\326\156\365\203\272\155\130\275\044\331\126\110\352\357\304\242\106\201\210\152\072\106\321\251\233\115\311\141\332\321\135\127\152\030$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "USERTrust ECC Certification Authority"
- # Issuer: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US
- # Serial Number:5c:8b:99:c5:5a:94:c5:d2:71:56:de:cd:89:80:cc:26
- # Subject: CN=USERTrust ECC Certification Authority,O=The USERTRUST Network,L=Jersey City,ST=New Jersey,C=US
- # Not Valid Before: Mon Feb 01 00:00:00 2010
- # Not Valid After: Mon Jan 18 23:59:59 2038
- # Fingerprint (SHA-256):
- 4F:F4:60:D5:4B:9C:86:DA:BF:BC:FC:57:12:E0:40:0D:2B:ED:3F:BC:4D:4F:BD:AA:86:E0:6A:DC:D2:A9:AD:7A
- # Fingerprint (SHA1): D1:CB:CA:5D:B2:D5:2A:7F:69:3B:67:4D:E5:F0:5A:1D:0C:95:7D:F0
- CKA CLASS CK OBJECT CLASS CKO NSS TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "USERTrust ECC Certification Authority"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \frac{321\313\312\135\262\325\052\177\151\073\147\115\345\360\132\035\014\225\175\360}$ 

**END** 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 372\150\274\331\265\177\255\375\311\035\006\203\050\314\044\301$ 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\201\2006\003\125\004\0003\125\004\006\023\002\125\123\006\002\1006\003\125\0004\010\023\012\116\145\167\040\112\145\162\163\145\171\061\024\060\022\006\003\125\0004\007\023\013\112\145\162\163\145\171\040\103\151\164\171\061\036\060\034\006\003\125\0004\012\023\025\124\150\145\040\125\123\105\122\124\122\125\123\125\0004\003\023\023\045\125\123\105\122\124\162\165\163\164\040$ 

```
\105\103\103\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\label{eq:condition} $$ \002\020\134\213\231\305\132\224\305\322\161\126\336\315\211\200 $$
\314\046
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "GlobalSign ECC Root CA - R5"
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5
# Serial Number:60:59:49:e0:26:2e:bb:55:f9:0a:77:8a:71:f9:4a:d8:6c
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5
# Not Valid Before: Tue Nov 13 00:00:00 2012
# Not Valid After: Tue Jan 19 03:14:07 2038
# Fingerprint (SHA-256):
17:9F:BC:14:8A:3D:D0:0F:D2:4E:A1:34:58:CC:43:BF:A7:F5:9C:81:82:D7:83:A5:13:F6:EB:EC:10:0C:89:24
# Fingerprint (SHA1): 1F:24:C6:30:CD:A4:18:EF:20:69:FF:AD:4F:DD:5F:46:3A:1B:69:AA
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R5"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\label{eq:condition} $$ \060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157 $$
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\label{eq:condition} $$ \001\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151 $$
\147\156
END
CKA ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

\002\021\140\131\111\340\046\056\273\125\371\012\167\212\161\371

**END** 

#### CKA VALUE MULTILINE OCTAL

\060\202\002\036\060\202\001\244\240\003\002\001\002\002\021\140 \131\111\340\046\056\273\125\371\012\167\212\161\371\112\330\154 \060\012\006\010\052\206\110\316\075\004\003\003\060\120\061\044 \060\042\006\003\125\004\013\023\033\107\154\157\142\141\154\123 \151\147\156\040\105\103\103\040\122\157\157\164\040\103\101\040 \055\040\122\065\061\023\060\021\006\003\125\004\012\023\012\107 \154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125 \004\003\023\012\107\154\157\142\141\154\123\151\147\156\060\036 \027\015\061\062\061\061\061\063\060\060\060\060\060\060\060\132\027 \015\063\070\060\061\061\071\060\063\061\064\060\067\132\060\120  $\label{eq:condition} $$ \frac{154}123\frac{151}147\frac{6}040\frac{105}103\frac{103}040\frac{122}157\frac{157}164\sqrt{040}103}{103} $$$ \101\040\055\040\122\065\061\023\060\021\006\003\125\004\012\023 \003\125\004\003\023\012\107\154\157\142\141\154\123\151\147\156 \060\166\060\020\006\007\052\206\110\316\075\002\001\006\005\053  $\label{eq:condition} $$ \201\004\000\042\003\142\000\004\107\105\016\226\373\175\135\277 $$$ \351\071\321\041\370\237\013\266\325\173\036\222\072\110\131\034 \360\142\061\055\300\172\050\376\032\247\134\263\266\314\227\347  $\label{eq:condition} $$ 105\324\130\372\321\167\155\103\242\300\207\145\064\012\037\172$ \335\353\074\063\241\305\235\115\244\157\101\225\070\177\311\036  $\label{eq:condition} $$ \204\353\321\236\111\222\207\224\207\014\072\205\112\146\237\235 $$$ \131\223\115\227\141\006\206\112\243\102\060\100\060\016\006\003 \125\035\017\001\001\377\004\004\003\002\001\006\060\017\006\003 \125\035\023\001\001\377\004\005\060\003\001\001\377\060\035\006 \003\125\035\016\004\026\004\024\075\346\051\110\233\352\007\312 \041\104\112\046\336\156\336\322\203\320\237\131\060\012\006\010  $\label{eq:condition} $$ \052\206\110\316\075\004\003\003\003\150\000\060\145\002\061\000 $$$ \345\151\022\311\156\333\306\061\272\011\101\341\227\370\373\375 \232\342\175\022\311\355\174\144\323\313\005\045\213\126\331\240 \347\136\135\116\013\203\234\133\166\051\240\011\046\041\152\142 \002\060\161\322\265\217\134\352\073\341\170\011\205\250\165\222 \073\310\134\375\110\357\015\164\042\250\010\342\156\305\111\316 \307\014\274\247\141\151\361\367\073\341\052\313\371\053\363\146 \220\067

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "GlobalSign ECC Root CA - R5"

<sup>#</sup> Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5

<sup>#</sup> Serial Number:60:59:49:e0:26:2e:bb:55:f9:0a:77:8a:71:f9:4a:d8:6c

<sup>#</sup> Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R5

<sup>#</sup> Not Valid Before: Tue Nov 13 00:00:00 2012

```
17:9F:BC:14:8A:3D:D0:0F:D2:4E:A1:34:58:CC:43:BF:A7:F5:9C:81:82:D7:83:A5:13:F6:EB:EC:10:0C:89:24
# Fingerprint (SHA1): 1F:24:C6:30:CD:A4:18:EF:20:69:FF:AD:4F:DD:5F:46:3A:1B:69:AA
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R5"
CKA CERT SHA1 HASH MULTILINE OCTAL
\label{eq:condition} $$ \037\044\306\060\315\244\030\357\040\151\377\255\117\335\137\106$
\072\033\151\252
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\label{eq:condition} $$ \237\255\073\034\002\036\212\272\027\164\070\201\014\242\274\010 $$
END
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\\ 142\\141\\154\\123\\151\\147\\156\\040\\105\\103\\103\\040\\122\\157\\157\\164
\040\103\101\040\055\040\122\065\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\021\140\131\111\340\046\056\273\125\371\012\167\212\161\371
\112\330\154
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Staat der Nederlanden Root CA - G3"
# Issuer: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL
# Serial Number: 10003001 (0x98a239)
# Subject: CN=Staat der Nederlanden Root CA - G3,O=Staat der Nederlanden,C=NL
# Not Valid Before: Thu Nov 14 11:28:42 2013
# Not Valid After: Mon Nov 13 23:00:00 2028
# Fingerprint (SHA-256):
3C:4F:B0:B9:5A:B8:B3:00:32:F4:32:B8:6F:53:5F:E1:72:C1:85:D0:FD:39:86:58:37:CF:36:18:7F:A6:F4:28
# Fingerprint (SHA1): D8:EB:6B:41:51:92:59:E0:F3:E7:85:00:C0:3D:B6:88:97:C9:EE:FC
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

# Not Valid After: Tue Jan 19 03:14:07 2038

# Fingerprint (SHA-256):

CKA\_LABEL UTF8 "Staat der Nederlanden Root CA - G3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL \060\132\061\013\060\011\006\003\125\004\006\023\002\116\114\061

\122\157\157\164\040\103\101\040\055\040\107\063

**END** 

CKA\_ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\000\230\242\071

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\164\060\202\003\134\240\003\002\001\002\002\004\000  $\label{eq:condition} $$ \230\242\071\060\015\006\011\052\206\110\206\367\015\001\001\013$ \005\000\060\132\061\013\060\011\006\003\125\004\006\023\002\116 \114\061\036\060\034\006\003\125\004\012\014\025\123\164\141\141  $\\ 164 \\ 040 \\ 144 \\ 145 \\ 162 \\ 040 \\ 116 \\ 145 \\ 144 \\ 145 \\ 162 \\ 154 \\ 141 \\ 156 \\ 144 \\ 145 \\$ \156\061\053\060\051\006\003\125\004\003\014\042\123\164\141\141 \164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145 \156\040\122\157\157\164\040\103\101\040\055\040\107\063\060\036 \027\015\061\063\061\061\061\064\061\061\062\070\064\062\132\027 \015\062\070\061\061\061\063\062\063\060\060\060\060\060\132\060\132 \061\013\060\011\006\003\125\004\006\023\002\116\114\061\036\060 \034\006\003\125\004\012\014\025\123\164\141\141\164\040\144\145 \162\040\116\145\144\145\162\154\141\156\144\145\156\061\053\060 \051\006\003\125\004\003\014\042\123\164\141\141\164\040\144\145 \162\040\116\145\144\145\162\154\141\156\144\145\156\040\122\157  $\label{eq:condition} $$ \frac{157}{164}040\\103\\101\\040\\055\\040\\107\\063\\060\\202\\002\\042\\060\\015$  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002$ \017\000\060\202\002\012\002\202\002\001\000\276\062\242\124\017 \160\373\054\134\131\353\154\304\244\121\350\205\052\263\314\112 \064\362\260\137\363\016\307\034\075\123\036\210\010\150\330\157 \075\255\302\236\314\202\147\007\047\207\150\161\072\237\165\226 \042\106\005\260\355\255\307\133\236\052\336\234\374\072\306\225 \247\365\027\147\030\347\057\111\010\014\134\317\346\314\064\355 \170\373\120\261\334\153\062\360\242\376\266\074\344\354\132\227 \307\077\036\160\010\060\240\334\305\263\155\157\320\202\162\021

\253\322\201\150\131\202\027\267\170\222\140\372\314\336\077\204 \353\215\070\063\220\012\162\043\372\065\314\046\161\061\321\162 \050\222\331\133\043\155\146\265\155\007\102\353\246\063\316\222 \333\300\366\154\143\170\315\312\116\075\265\345\122\233\361\276 \073\346\124\140\260\146\036\011\253\007\376\124\211\021\102\321  $\label{eq:condition} $$ \367\044\272\140\170\032\230\367\311\021\375\026\301\065\032\124 $$$ \165\357\103\323\345\256\116\316\347\173\303\306\116\141\121\113 \253\232\105\113\241\037\101\275\110\123\025\161\144\013\206\263 \345\056\276\316\244\033\301\051\204\242\265\313\010\043\166\103 \042\044\037\027\004\324\156\234\306\374\177\053\146\032\354\212 \345\326\317\115\365\143\011\267\025\071\326\173\254\353\343\174 \351\116\374\165\102\310\355\130\225\014\006\102\242\234\367\344 \160\263\337\162\157\132\067\100\211\330\205\244\327\361\013\336  $\label{eq:condition} $$ 103\031\324\112\130\054\214\212\071\236\277\204\207\361\026\073$  $\label{eq:condition} $$ \066\014\351\323\264\312\154\031\101\122\011\241\035\260\152\277 $$$ \202\357\160\121\041\062\334\005\166\214\313\367\144\344\003\120 \257\214\221\147\253\305\362\356\130\330\336\276\367\347\061\317 \154\311\073\161\301\325\210\265\145\274\300\350\027\027\007\022 \265\134\322\253\040\223\264\346\202\203\160\066\305\315\243\215 \255\213\354\243\301\103\207\346\103\342\064\276\225\213\065\355 \007\071\332\250\035\172\237\066\236\022\260\014\145\022\220\025 \140\331\046\100\104\343\126\140\245\020\324\152\074\375\101\334  $\label{eq:condition} $$ \016\132\107\266\357\227\141\165\117\331\376\307\262\035\324\355$$ \135\111\263\251\152\313\146\204\023\325\134\240\334\337\156\167  $\label{eq:condition} $$ \006\321\161\165\310\127\157\257\017\167\133\002\003\001\000\001$ \243\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005 \060\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004 \124\255\372\307\222\127\256\312\065\234\056\022\373\344\272\135 \040\334\224\127\060\015\006\011\052\206\110\206\367\015\001\001  $\label{eq:condition} $$ \005\000\003\202\002\001\000\060\231\235\005\062\310\136\016 $$$ \073\230\001\072\212\244\347\007\367\172\370\347\232\337\120\103 \123\227\052\075\312\074\107\230\056\341\025\173\361\222\363\141 \332\220\045\026\145\300\237\124\135\016\003\073\133\167\002\234 \204\266\015\230\137\064\335\073\143\302\303\050\201\302\234\051 \056\051\342\310\303\001\362\063\352\052\252\314\011\010\367\145 \147\306\315\337\323\266\053\247\275\314\321\016\160\137\270\043 \321\313\221\116\012\364\310\172\345\331\143\066\301\324\337\374  $\\ \langle 042 \rangle 227 \rangle 367 \rangle 140 \rangle 135 \rangle 352 \rangle 051 \rangle 057 \rangle 130 \rangle 262 \rangle 275 \rangle 130 \rangle 275 \rangle 215 \rangle 226 \rangle 1172 \rangle 130 \rangle 262 \rangle 275 \rangle 130 \rangle 275 \rangle$  $\label{eq:condition} $$ \020\165\277\110\173\075\121\207\241\074\164\042\302\374\007\177$ \200\334\304\254\376\152\301\160\060\260\351\216\151\342\054\151 \201\224\011\272\335\376\115\300\203\214\224\130\300\106\040\257 \234\037\002\370\065\125\111\057\106\324\300\360\240\226\002\017 \063\305\161\363\236\043\175\224\267\375\072\323\011\203\006\041 \375\140\075\256\062\300\322\356\215\246\360\347\264\202\174\012 \314\160\311\171\200\370\376\114\367\065\204\031\212\061\373\012 \331\327\177\233\360\242\232\153\303\005\112\355\101\140\024\060 \321\252\021\102\156\323\043\002\004\013\306\145\335\335\122\167

 $\label{eq:control_stress} $$ 332 \times 201 \times 326 \times 250 \times 372 \times 100 \times 176 \times 362 \times 344 \times 124 \times 325 \times 344 \times 152 \times 170 \times 357 \times 112 \times 275 \times 323 \times 371 \times 111 \times 1224 \times 326 \times 344 \times 325 \times 344 \times 152 \times 354 \times 112 \times 275 \times 323 \times 371 \times 111 \times 1065 \times 232 \times 32032 \times 31263 \times 225 \times 3150 \times 322 \times 367 \times 46 \times 271 \times 145 \times 325 \times 340 \times 326 \times 321 \times 340 \times 326 \times 322 \times 327 \times 340 \times 326 \times 322 \times 327 \times 326 \times 374 \times 325 \times 340 \times 326 \times 322 \times 327 \times 326 \times 374 \times 325 \times 326 \times 322 \times 321 \times 326 \times 321 \times 326 \times 322 \times 321 \times 326 \times 322 \times 321 \times 326 \times$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Staat der Nederlanden Root CA G3"
- # Issuer: CN=Staat der Nederlanden Root CA G3,O=Staat der Nederlanden,C=NL
- # Serial Number: 10003001 (0x98a239)
- # Subject: CN=Staat der Nederlanden Root CA G3,O=Staat der Nederlanden,C=NL
- # Not Valid Before: Thu Nov 14 11:28:42 2013
- # Not Valid After: Mon Nov 13 23:00:00 2028
- # Fingerprint (SHA-256):
- 3C:4F:B0:B9:5A:B8:B3:00:32:F4:32:B8:6F:53:5F:E1:72:C1:85:D0:FD:39:86:58:37:CF:36:18:7F:A6:F4:28
- # Fingerprint (SHA1): D8:EB:6B:41:51:92:59:E0:F3:E7:85:00:C0:3D:B6:88:97:C9:EE:FC

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Staat der Nederlanden Root CA - G3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\330\353\153\101\121\222\131\340\363\347\205\000\300\075\266\210 \227\311\356\374

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00013\00011\006\003\125\004\0006\023\002\116\114\061\036\060\034\0006\003\125\0004\012\014\025\123\164\141\141\164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040\144\145\156\040\144\145\156\040\122\157\157\164\040\103\101\040\055\040\107\063$ 

```
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\004\000\230\242\071
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Staat der Nederlanden EV Root CA"
# Issuer: CN=Staat der Nederlanden EV Root CA,O=Staat der Nederlanden,C=NL
# Serial Number: 10000013 (0x98968d)
# Subject: CN=Staat der Nederlanden EV Root CA,O=Staat der Nederlanden,C=NL
# Not Valid Before: Wed Dec 08 11:19:29 2010
# Not Valid After: Thu Dec 08 11:10:28 2022
# Fingerprint (SHA-256):
4D:24:91:41:4C:FE:95:67:46:EC:4C:EF:A6:CF:6F:72:E2:8A:13:29:43:2F:9D:8A:90:7A:C4:CB:5D:AD:C1:5A
# Fingerprint (SHA1): 76:E2:7E:C1:4F:DB:82:C1:C0:A6:75:B5:05:BE:3D:29:B4:ED:DB:BB
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Staat der Nederlanden EV Root CA"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\label{eq:condition} $$ \060\130\061\013\060\011\006\003\125\004\006\023\002\116\114\061 $$
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\label{eq:condition} $$ \0.051\0.004\0.003\1.25\0.004\0.003\0.14\0.40\1.23\1.64\1.41\1.41\1.64\0.40 $$
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\105\126\040\122\157\157\164\040\103\101
END
CKA ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\060\130\061\013\060\011\006\003\125\004\006\023\002\116\114\061
\036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\051\060\047\006\003\125\004\003\014\040\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\105\126\040\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

\002\004\000\230\226\215

**END** 

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\160\060\202\003\130\240\003\002\001\002\002\004\000

\230\226\215\060\015\006\011\052\206\110\206\367\015\001\001\013 \005\000\060\130\061\013\060\011\006\003\125\004\006\023\002\116 \114\061\036\060\034\006\003\125\004\012\014\025\123\164\141\141 \164\040\144\145\162\040\116\145\144\145\162\154\141\156\144\145 \156\061\051\060\047\006\003\125\004\003\014\040\123\164\141\141 \156\040\105\126\040\122\157\157\164\040\103\101\060\036\027\015 \061\060\061\062\060\070\061\061\061\071\062\071\132\027\015\062  $\label{eq:condition} $$ \062\061\062\060\070\061\061\060\062\070\132\060\130\061\013$ \060\011\006\003\125\004\006\023\002\116\114\061\036\060\034\006 \003\125\004\012\014\025\123\164\141\141\164\040\144\145\162\040 \003\125\004\003\014\040\123\164\141\141\164\040\144\145\162\040  $\label{eq:condition} $$ \frac{157}{157}\frac{64}{040}\frac{103}{101}\frac{060}{202}\frac{002}{042}\frac{060}{015}\frac{011}{052}\frac{206}{206} $$$ \110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  $\label{eq:condition} $$ \002\01\002\02\001\000\343\307\176\211\371\044\113\072\322 $$$ \063\203\065\054\151\354\334\011\244\343\121\250\045\053\171\270 \010\075\340\221\272\204\205\306\205\244\312\346\311\056\123\244 \311\044\036\375\125\146\161\135\054\305\140\150\004\267\331\302 \122\046\070\210\244\326\073\100\246\302\315\077\315\230\223\263 \124\024\130\226\125\325\120\376\206\255\244\143\177\134\207\366  $\label{eq:condition} $$ \frac{346}{47} 222\frac{147}{027} 222\frac{002}{003} \frac{334}{334} \frac{326}{146} \frac{164}{355} \frac{335}{335} $$$ \147\377\301\141\215\143\117\017\233\155\027\060\046\357\253\322  $\label{eq:condition} $$ \037\020\240\371\305\177\026\151\201\003\107\355\036\150\215\162$ \241\115\262\046\306\272\154\137\155\326\257\321\261\023\216\251 \255\363\136\151\165\046\030\076\101\053\041\177\356\213\135\007  $\label{eq:condition} $$ \006\235\103\304\051\012\053\374\052\076\206\313\074\203\072\371 $$$ \311\015\332\305\231\342\274\170\101\063\166\341\277\057\135\345 \244\230\120\014\025\335\340\372\234\177\070\150\320\262\246\172  $\label{eq:condition} $$ 247\321\061\275\176\212\130\047\103\263\272\063\221\323\247\230 $$$ \025\134\232\346\323\017\165\331\374\101\230\227\076\252\045\333 \217\222\056\260\173\014\137\361\143\251\067\371\233\165\151\114 \050\046\045\332\325\362\022\160\105\125\343\337\163\136\067\365 \041\154\220\216\065\132\311\323\043\353\323\300\276\170\254\102 \050\130\146\245\106\155\160\002\327\020\371\113\124\374\135\206 \112\207\317\177\312\105\254\021\132\265\040\121\215\057\210\107  $\label{eq:condition} $$ \227\071\300\317\272\300\102\001\100\231\110\041\013\153\247\322 $$$ \375\226\325\321\276\106\235\111\340\013\246\240\042\116\070\320  $\label{eq:condition} $$ 301\074\060\274\160\217\054\165\314\320\305\214\121\073\075\224 $$$ \010\144\046\141\175\271\303\145\217\024\234\041\320\252\375\027 \162\003\217\275\233\214\346\136\123\236\271\235\357\202\273\341 \274\342\162\101\133\041\224\323\105\067\224\321\337\011\071\135 \347\043\252\232\035\312\155\250\012\206\205\212\202\276\102\007 \326\362\070\202\163\332\207\133\345\074\323\236\076\247\073\236 \364\003\263\371\361\175\023\164\002\377\273\241\345\372\000\171  $\label{eq:condition} $$ \034\246\146\101\210\134\140\127\246\056\011\304\272\375\232\317 $$$ \247\037\100\303\273\314\132\012\125\113\073\070\166\121\270\143

\213\204\224\026\346\126\363\002\003\001\000\001\243\102\060\100 \060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001 \377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  $\label{eq:condition} $$ \006\003\125\035\016\004\026\004\024\376\253\000\220 $$$ \230\236\044\374\251\314\032\212\373\047\270\277\060\156\250\073 \060\015\006\011\052\206\110\206\367\015\001\001\001\013\005\000\003 \202\002\001\000\317\167\054\156\126\276\116\263\266\204\000\224 \253\107\311\015\322\166\307\206\237\035\007\323\266\264\273\010 \170\257\151\322\013\111\336\063\305\254\255\302\210\002\175\006 \267\065\002\301\140\311\277\304\350\224\336\324\323\251\023\045 \132\376\156\242\256\175\005\334\175\363\154\360\176\246\215\356  $\label{eq:condition} $$ \frac{331}{327}\frac{316}{130}\frac{027}{350}\frac{251}{051}\frac{256}{163}\frac{110}{207}\frac{347}{233}\frac{312}{156} $$$ \051\241\144\137\031\023\367\256\006\020\377\121\306\233\115\125  $\label{eq:condition} $$ \045\117\223\231\020\001\123\165\361\023\316\307\246\101\101\322 $$$ \277\210\245\177\105\374\254\270\245\265\063\014\202\304\373\007 \366\152\345\045\204\137\006\312\301\206\071\021\333\130\315\167  $\label{eq:condition} $$ \073\054\302\114\017\136\232\343\360\253\076\141\033\120\044\302$ \300\364\361\031\360\021\051\266\245\030\002\233\327\143\114\160 \214\107\243\003\103\134\271\135\106\240\015\157\377\131\216\276 \335\237\162\303\133\053\337\214\133\316\345\014\106\154\222\262 \012\243\114\124\102\030\025\022\030\275\332\374\272\164\156\377 \301\266\240\144\330\251\137\125\256\237\134\152\166\226\330\163  $\\ 147 \\ 207 \\ 373 \\ 115 \\ 177 \\ 134 \\ 356 \\ 151 \\ 312 \\ 163 \\ 020 \\ 373 \\ 212 \\ 251 \\ 375 \\ 236 \\$ \275\066\070\111\111\207\364\016\024\360\351\207\270\077\247\117 \172\132\216\171\324\223\344\273\150\122\204\254\154\351\363\230 \160\125\162\062\371\064\253\053\111\265\315\040\142\344\072\172 \147\143\253\226\334\155\256\227\354\374\237\166\126\210\056\146 \317\133\266\311\244\260\327\005\272\341\047\057\223\273\046\052 \242\223\260\033\363\216\276\035\100\243\271\066\217\076\202\032 \032\136\210\352\120\370\131\342\203\106\051\013\343\104\134\341  $\label{eq:condition} $$ \225\266\151\220\232\024\157\227\256\201\317\150\357\231\232\276$ \265\347\341\177\370\372\023\107\026\114\314\155\010\100\347\213 \170\157\120\202\104\120\077\146\006\212\253\103\204\126\112\017 \040\055\206\016\365\322\333\322\172\212\113\315\245\350\116\361 \136\046\045\001\131\043\240\176\322\366\176\041\127\327\047\274 \025\127\114\244\106\301\340\203\036\014\114\115\037\117\006\031 \342\371\250\364\072\202\241\262\171\103\171\326\255\157\172\047 \220\003\244\352\044\207\077\331\275\331\351\362\137\120\111\034 \356\354\327\056

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Staat der Nederlanden EV Root CA"

<sup>#</sup> Issuer: CN=Staat der Nederlanden EV Root CA,O=Staat der Nederlanden,C=NL

<sup>#</sup> Serial Number: 10000013 (0x98968d)

<sup>#</sup> Subject: CN=Staat der Nederlanden EV Root CA,O=Staat der Nederlanden,C=NL

```
# Not Valid After: Thu Dec 08 11:10:28 2022
# Fingerprint (SHA-256):
4D:24:91:41:4C:FE:95:67:46:EC:4C:EF:A6:CF:6F:72:E2:8A:13:29:43:2F:9D:8A:90:7A:C4:CB:5D:AD:C1:5A
# Fingerprint (SHA1): 76:E2:7E:C1:4F:DB:82:C1:C0:A6:75:B5:05:BE:3D:29:B4:ED:DB:BB
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Staat der Nederlanden EV Root CA"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\label{eq:condition} $$ 166\342\176\301\117\333\202\301\300\246\165\265\005\276\075\051 $$
\264\355\333\273
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\374\006\257\173\350\032\361\232\264\350\322\160\037\300\365\272
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\130\061\013\060\011\006\003\125\004\006\023\002\116\114\061 $$
\label{eq:condition} $$ \036\060\034\006\003\125\004\012\014\025\123\164\141\141\164\040 $$
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\061
\051\060\047\006\003\125\004\003\014\040\123\164\141\141\164\040
\144\145\162\040\116\145\144\145\162\154\141\156\144\145\156\040
\105\126\040\122\157\157\164\040\103\101
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\004\000\230\226\215
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "IdenTrust Commercial Root CA 1"
# Issuer: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US
# Serial Number:0a:01:42:80:00:00:01:45:23:c8:44:b5:00:00:00:02
# Subject: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US
# Not Valid Before: Thu Jan 16 18:12:23 2014
# Not Valid After: Mon Jan 16 18:12:23 2034
# Fingerprint (SHA-256):
5D:56:49:9B:E4:D2:E0:8B:CF:CA:D0:8A:3E:38:72:3D:50:50:3B:DE:70:69:48:E4:2F:55:60:30:19:E5:28:AE
# Fingerprint (SHA1): DF:71:7E:AA:4A:D9:4E:C9:55:84:99:60:2D:48:DE:5F:BC:F0:3A:25
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
```

# Not Valid Before: Wed Dec 08 11:19:29 2010

CKA LABEL UTF8 "IdenTrust Commercial Root CA 1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \000112\0013\006\003\125\004\0006\023\002\125\123\061 $$ \022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162 $$ \165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144 $$ \145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151 $$ \141\154\040\122\157\157\164\040\103\101\040\061 $$$ 

END CKA ID UTF8 "0"

# CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000112\0013\006\003\125\004\0006\023\002\125\123\006\022\006\0020\006\003\125\004\0012\023\011\111\144\145\156\124\162\165\163\164\004\003\125\0004\003\023\036\111\144\145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151\141\154\040\122\157\157\164\040\103\101\040\061$ 

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\012\001\102\200\000\000\001\105\043\310\104\265\000\000\000\000\000

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \0.060\202\005\140\060\202\003\110\240\003\002\001\002\002\002\001\2$ \001\102\200\000\000\001\105\043\310\104\265\000\000\000\000\002\060 \015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\112 \061\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060 \020\006\003\125\004\012\023\011\111\144\145\156\124\162\165\163 \124\162\165\163\164\040\103\157\155\155\145\162\143\151\141\154 \040\122\157\157\164\040\103\101\040\061\060\036\027\015\061\064 \061\061\066\061\070\061\062\062\063\132\060\112\061\013\060\011 \006\003\125\004\006\023\002\125\123\061\022\060\020\006\003\125 \004\012\023\011\111\144\145\156\124\162\165\163\164\061\047\060 \045\006\003\125\004\003\023\036\111\144\145\156\124\162\165\163 \164\040\103\157\155\155\145\162\143\151\141\154\040\122\157\157 \164\040\103\101\040\061\060\202\002\042\060\015\006\011\052\206 \110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  $\label{eq:condition} $$ \002\01\002\02\001\000\247\120\031\336\077\231\075\324\063 $$$  $\label{eq:condition} $$ 106\361\157\121\141\202\262\251\117\217\147\211\135\204\331\123$ \335\014\050\331\327\360\377\256\225\103\162\231\371\265\135\174 \212\301\102\341\061\120\164\321\201\015\174\315\233\041\253\103 \342\254\255\136\206\156\363\011\212\037\132\062\275\242\353\224 \371\350\134\012\354\377\230\322\257\161\263\264\123\237\116\207 \357\222\274\275\354\117\062\060\210\113\027\136\127\304\123\302 \366\002\227\215\331\142\053\277\044\037\142\215\337\303\270\051 \113\111\170\074\223\140\210\042\374\231\332\066\310\302\242\324 \054\124\000\147\065\156\163\277\002\130\360\244\335\345\260\242

\046\172\312\340\066\245\031\026\365\375\267\357\256\077\100\365 \155\132\004\375\316\064\312\044\334\164\043\033\135\063\023\022 \135\304\001\045\366\060\335\002\135\237\340\325\107\275\264\353 \033\241\273\111\111\330\237\133\002\363\212\344\044\220\344\142 \117\117\301\257\213\016\164\027\250\321\162\210\152\172\001\111 \314\264\106\171\306\027\261\332\230\036\007\131\372\165\041\205 \145\335\220\126\316\373\253\245\140\235\304\235\371\122\260\213 \275\207\371\217\053\043\012\043\166\073\367\063\341\311\000\363  $\label{eq:condition} $$ \frac{151}{371}\frac{242}{340}\frac{274}{176}\frac{223}{071}\frac{007}{367}\frac{104}{160}\frac{176}{176} $$$ \376\007\132\345\261\254\321\030\314\362\065\345\111\111\010\312 \126\311\075\373\017\030\175\213\073\301\023\302\115\217\311\117  $\label{eq:condition} $$ \016\067\351\037\241\016\152\337\142\056\313\065\006\121\171\054$$$ \310\045\070\364\372\113\247\211\134\234\322\343\015\071\206\112 \164\174\325\131\207\302\077\116\014\134\122\364\075\367\122\202 \361\352\243\254\375\111\064\032\050\363\101\210\072\023\356\350 \336\377\231\035\137\272\313\350\036\362\271\120\140\300\061\323 \163\345\357\276\240\355\063\013\164\276\040\040\304\147\154\360 \010\003\172\125\200\177\106\116\226\247\364\036\076\341\366\330 \011\341\063\144\053\143\327\062\136\237\371\300\173\017\170\157 \227\274\223\232\371\234\022\220\170\172\200\207\025\327\162\164 \234\125\164\170\261\272\341\156\160\004\272\117\240\272\150\303 \173\377\061\360\163\075\075\224\052\261\013\101\016\240\376\115 \210\145\153\171\063\264\327\002\003\001\000\001\243\102\060\100 \060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006 \060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001 \377\060\035\006\003\125\035\016\004\026\004\024\355\104\031\300 \323\360\006\213\356\244\173\276\102\347\046\124\310\216\066\166  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\013\005\000\003$ \202\002\001\000\015\256\220\062\366\246\113\174\104\166\031\141 \036\047\050\315\136\124\357\045\274\343\010\220\371\051\327\256  $\label{eq:condition} $$ \frac{150\\010\\341\\224\\000\\130\\357\\056\\056\\176\\123\\122\\214\\266\\134\\007$ \352\210\272\231\213\120\224\327\202\200\337\141\011\000\223\255 \015\024\346\316\301\362\067\224\170\260\137\234\263\242\163\270 \217\005\223\070\315\215\076\260\270\373\300\317\261\362\354\055 \055\033\314\354\252\232\263\252\140\202\033\055\073\303\204\075 \127\212\226\036\234\165\270\323\060\315\140\010\203\220\323\216 \124\361\115\146\300\135\164\003\100\243\356\205\176\302\037\167 \234\006\350\301\247\030\135\122\225\355\311\335\045\236\155\372 \251\355\243\072\064\320\131\173\332\355\120\363\065\277\355\353 \024\115\061\307\140\364\332\361\207\234\342\110\342\306\305\067 \373\006\020\372\165\131\146\061\107\051\332\166\232\034\351\202 \256\357\232\271\121\367\210\043\232\151\225\142\074\345\125\200 \066\327\124\002\377\361\271\135\316\324\043\157\330\105\204\112 \133\145\357\211\014\335\024\247\040\313\030\245\045\264\015\371 \001\360\242\322\364\000\310\164\216\241\052\110\216\145\333\023 \304\342\045\027\175\353\276\207\133\027\040\124\121\223\112\123 \003\013\354\135\312\063\355\142\375\105\307\057\133\334\130\240 \200\071\346\372\327\376\023\024\246\355\075\224\112\102\164\324

 $\label{eq:control} $$303\backslash167\backslash131\backslash163\backslash315\backslash217\backslash106\backslash276\backslash125\backslash070\backslash357\backslash372\backslash350\backslash221\backslash062\backslash352\\ $$227\backslash130\backslash004\backslash042\backslash336\backslash070\backslash303\backslash314\backslash274\backslash155\backslash311\backslash063\backslash072\backslash152\backslash012\backslash151\\ $$077\backslash240\backslash310\backslash352\backslash162\backslash217\backslash214\backslash143\backslash206\backslash043\backslash275\backslash155\backslash074\backslash226\backslash236\backslash225\\ $$340\backslash111\backslash114\backslash252\backslash242\backslash271\backslash052\backslash033\backslash234\backslash066\backslash201\backslash170\backslash355\backslash303\backslash350\backslash106\\ $$342\backslash046\backslash131\backslash104\backslash165\backslash036\backslash331\backslash165\backslash211\backslash121\backslash315\backslash020\backslash204\backslash235\backslash141\backslash140\\ $$313\backslash135\backslash371\backslash227\backslash042\backslash115\backslash216\backslash230\backslash346\backslash343\backslash177\backslash366\backslash133\backslash273\backslash256\backslash315\\ $$312\backslash112\backslash201\backslash153\backslash136\backslash013\backslash363\backslash121\backslash341\backslash164\backslash053\backslash351\backslash176\backslash047\backslash247\backslash331\\ $$231\backslash111\backslash116\backslash370\backslash245\backslash200\backslash333\backslash045\backslash017\backslash034\backslash143\backslash142\backslash212\backslash311\backslash063\backslash147\\ $$153\backslash074\backslash020\backslash203\backslash306\backslash255\backslash336\backslash250\backslash315\backslash026\backslash216\backslash215\backslash360\backslash007\backslash067\backslash161\\ $$237\backslash362\backslash253\backslash374\backslash101\backslash365\backslash301\backslash213\backslash354\backslash000\backslash067\backslash135\backslash011\backslash345\backslash116\backslash200\\ $$357\backslash372\backslash261\backslash134\backslash070\backslash006\backslash245\backslash033\backslash112\backslash341\backslash334\backslash070\backslash055\backslash074\backslash334\backslash253\\ $$037\backslash220\backslash032\backslash325\backslash112\backslash234\backslash356\backslash321\backslash160\backslash154\backslash314\backslash356\backslash364\backslash127\backslash370\backslash030\\ $$272\backslash204\backslash156\backslash207$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "IdenTrust Commercial Root CA 1"
- # Issuer: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US
- # Serial Number:0a:01:42:80:00:00:01:45:23:c8:44:b5:00:00:00:02
- # Subject: CN=IdenTrust Commercial Root CA 1,O=IdenTrust,C=US
- # Not Valid Before: Thu Jan 16 18:12:23 2014
- # Not Valid After: Mon Jan 16 18:12:23 2034
- # Fingerprint (SHA-256):
- 5D:56:49:9B:E4:D2:E0:8B:CF:CA:D0:8A:3E:38:72:3D:50:50:3B:DE:70:69:48:E4:2F:55:60:30:19:E5:28:AE
- # Fingerprint (SHA1): DF:71:7E:AA:4A:D9:4E:C9:55:84:99:60:2D:48:DE:5F:BC:F0:3A:25
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA TOKEN CK BBOOL CK TRUE
- CKA PRIVATE CK BBOOL CK FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA LABEL UTF8 "IdenTrust Commercial Root CA 1"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL
- \337\161\176\252\112\331\116\311\125\204\231\140\055\110\336\137 \274\360\072\045

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\263\076\167\163\165\356\240\323\343\176\111\143\111\131\273\307 END

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000112\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$ \0022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162 $$ \165\163\164\061\047\060\045\006\003\125\004\003\023\036\111\144 $$ \145\156\124\162\165\163\164\040\103\157\155\155\145\162\143\151 $$ \141\154\040\122\157\157\164\040\103\101\040\061 $$$ 

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\020\012\001\102\200\000\000\001\105\043\310\104\265\000\000 $$$ 

```
\000\002
```

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "IdenTrust Public Sector Root CA 1"

#

- # Issuer: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US
- # Serial Number:0a:01:42:80:00:00:01:45:23:cf:46:7c:00:00:00:02
- # Subject: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US
- # Not Valid Before: Thu Jan 16 17:53:32 2014
- # Not Valid After: Mon Jan 16 17:53:32 2034
- # Fingerprint (SHA-256):
- 30:D0:89:5A:9A:44:8A:26:20:91:63:55:22:D1:F5:20:10:B5:86:7A:CA:E1:2C:78:EF:95:8F:D4:F4:38:9F:2F
- # Fingerprint (SHA1): BA:29:41:60:77:98:3F:F4:F3:EF:F2:31:05:3B:2E:EA:6D:4D:45:FD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "IdenTrust Public Sector Root CA 1"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$ 

\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162

\145\156\124\162\165\163\164\040\120\165\142\154\151\143\040\123

\145\143\164\157\162\040\122\157\157\164\040\103\101\040\061

**END** 

CKA\_ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\012\001\102\200\000\000\001\105\043\317\106\174\000\000\000\0002

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\020\006\003\125\004\012\023\011\111\144\145\156\124\162\165\163 \164\061\052\060\050\006\003\125\004\003\023\041\111\144\145\156 \124\162\165\163\164\040\120\165\142\154\151\143\040\123\145\143 \164\157\162\040\122\157\157\164\040\103\101\040\061\060\036\027 \015\061\064\060\061\061\066\061\067\065\063\063\062\132\027\015 \013\060\011\006\003\125\004\006\023\002\125\123\061\022\060\020 \006\003\125\004\012\023\011\111\144\145\156\124\162\165\163\164 \162\165\163\164\040\120\165\142\154\151\143\040\123\145\143\164 \157\162\040\122\157\157\164\040\103\101\040\061\060\202\002\042  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\001\005\000\003$ \202\002\017\000\060\202\002\012\002\202\002\001\000\266\042\224 \374\244\110\257\350\107\153\012\373\047\166\344\362\077\212\073 \172\112\054\061\052\214\215\260\251\303\061\153\250\167\166\204 \046\266\254\201\102\015\010\353\125\130\273\172\370\274\145\175  $\label{eq:condition} $$ \362\240\155\213\250\107\351\142\166\036\021\356\010\024\321\262$ \104\026\364\352\320\372\036\057\136\333\313\163\101\256\274\000 \260\112\053\100\262\254\341\073\113\302\055\235\344\241\233\354  $\label{eq:condition} $$ \032\072\036\360\010\263\320\344\044\065\007\237\234\264\311\122$ \155\333\007\312\217\265\133\360\203\363\117\307\055\245\310\255 \313\225\040\244\061\050\127\130\132\344\215\033\232\253\236\015  $\\ \langle 014 \rangle 362 \rangle 012 \rangle 063 \rangle 071 \rangle 042 \rangle 071 \rangle 012 \rangle 227 \rangle 056 \rangle 363 \rangle 123 \rangle 167 \rangle 271 \rangle 104 \rangle 105$ \375\204\313\066\040\201\131\055\232\157\155\110\110\141\312\114  $\label{eq:condition} $$ \frac{337}{123}\frac{321}{257}\frac{274}{104}\frac{237}{253}\frac{57}{153}\frac{203}{162}\frac{357}{165}\frac{200}{200} $$$ \332\006\063\033\135\310\332\143\306\115\315\254\146\061\315\321 \336\076\207\020\066\341\271\244\172\357\140\120\262\313\312\246  $\label{eq:condition} $$ \frac{340}{067}257\\253\\064\\023\\071\\045\\350\\071\\146\\344\\230\\172\\252$ \022\230\234\131\146\206\076\255\361\260\312\076\006\017\173\360 \021\113\067\240\104\155\173\313\250\214\161\364\325\265\221\066 \174\005\175\055\041\325\000\277\001\147\242\136\173\246\134\362 \367\042\361\220\015\223\333\252\104\121\146\314\175\166\003\353 \152\250\052\070\031\227\166\015\153\212\141\371\274\366\356\166 \375\160\053\335\051\074\370\012\036\133\102\034\213\126\057\125 \033\034\241\056\265\307\026\346\370\252\074\222\216\151\266\001 \301\265\206\235\211\017\013\070\224\124\350\352\334\236\075\045 \274\123\046\355\325\253\071\252\305\100\114\124\253\262\264\331 \331\370\327\162\333\034\274\155\275\145\137\357\210\065\052\146  $\begin{tabular}{l} $$ \begin{tabular}{l} $\begin{tabular}{l} $\b$ \151\372\233\265\320\141\152\315\312\113\331\114\220\106\253\025 \131\241\107\124\051\056\203\050\137\034\302\242\253\162\027\000 \006\216\105\354\213\342\063\075\177\332\031\104\344\142\162\303 \337\042\306\362\126\324\335\137\225\162\355\155\137\367\110\003 \133\375\305\052\240\366\163\043\204\020\033\001\347\002\003\001 \000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377 

\004\024\343\161\340\236\330\247\102\331\333\161\221\153\224\223 \353\303\243\321\024\243\060\015\006\011\052\206\110\206\367\015  $\label{eq:condition} $$ \001\01\013\005\000\003\202\002\001\000\107\372\335\012\260\021 $$$  $\label{eq:condition} $$ \221\070\255\115\135\367\345\016\227\124\031\202\110\207\124\214 $$$ \252\144\231\330\132\376\210\001\305\130\245\231\261\043\124\043  $\verb| 267| 152| 035| 040| 127| 345| 001| 142| 101| 027| 323| 011| 333| 165| 313| 156|$ \124\220\165\376\032\237\201\012\302\335\327\367\011\320\133\162  $\label{eq:condition} $$ \025\344\036\011\152\075\063\363\041\232\346\025\176\255\121\325$  $\label{eq:condition} $$ \020\355\175\102\300\217\356\300\232\010\325\101\326\134\016 $$$ \041\151\156\200\141\016\025\300\270\317\305\111\022\122\314\276  $\label{eq:condition} $$ \072\314\324\056\070\005\336\065\375\037\157\270\200\150\230\075$ \115\240\312\100\145\322\163\174\365\213\331\012\225\077\330\077 \043\155\032\321\052\044\031\331\205\263\027\357\170\156\251\130 \321\043\323\307\023\355\162\045\177\135\261\163\160\320\177\006 \227\011\204\051\200\141\035\372\136\377\163\254\240\343\211\270 \034\161\025\306\336\061\177\022\334\341\155\233\257\347\350\237  $\label{eq:condition} $$ 165\170\114\253\106\073\232\316\277\005\030\135\115\025\074\026$ \232\031\120\004\232\262\232\157\145\213\122\137\074\130\004\050 \045\300\146\141\061\176\271\340\165\271\032\250\201\326\162\027 \263\305\003\061\065\021\170\170\242\340\351\060\214\177\200\337 \130\337\074\272\047\226\342\200\064\155\343\230\323\144\047\254 \110\176\050\167\134\306\045\141\045\370\205\014\145\372\304\062 \057\245\230\005\344\370\013\147\026\026\306\202\270\062\031\371 \371\271\171\334\037\315\353\257\253\016\335\033\333\105\344\172 \347\002\342\225\135\374\151\360\123\151\141\225\165\171\013\136 \125\346\070\034\224\251\131\063\236\310\161\164\171\177\121\211 \266\310\152\270\060\310\152\070\303\156\236\341\067\026\352\005 \142\114\133\022\107\355\247\264\263\130\126\307\111\363\177\022 \150\011\061\161\360\155\370\116\107\373\326\205\356\305\130\100 \031\244\035\247\371\113\103\067\334\150\132\117\317\353\302\144 \164\336\264\025\331\364\124\124\032\057\034\327\227\161\124\220 \216\331\040\235\123\053\177\253\217\342\352\060\274\120\067\357 \361\107\265\175\174\054\004\354\150\235\264\111\104\020\364\162 \113\034\144\347\374\346\153\220\335\151\175\151\375\000\126\245 \267\254\266\255\267\312\076\001\357\234

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "IdenTrust Public Sector Root CA 1"
```

<sup>#</sup> Issuer: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US

<sup>#</sup> Serial Number:0a:01:42:80:00:00:01:45:23:cf:46:7c:00:00:00:02

<sup>#</sup> Subject: CN=IdenTrust Public Sector Root CA 1,O=IdenTrust,C=US

<sup>#</sup> Not Valid Before: Thu Jan 16 17:53:32 2014

<sup>#</sup> Not Valid After: Mon Jan 16 17:53:32 2034

<sup>#</sup> Fingerprint (SHA-256):

<sup>30:</sup>D0:89:5A:9A:44:8A:26:20:91:63:55:22:D1:F5:20:10:B5:86:7A:CA:E1:2C:78:EF:95:8F:D4:F4:38:9F:2F

```
# Fingerprint (SHA1): BA:29:41:60:77:98:3F:F4:F3:EF:F2:31:05:3B:2E:EA:6D:4D:45:FD
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "IdenTrust Public Sector Root CA 1"
CKA CERT SHA1 HASH MULTILINE OCTAL
\label{eq:condition} $$ \272\051\101\140\167\230\077\364\363\357\362\061\005\073\056\352 $$
\155\115\105\375
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\label{eq:condition} $$ \067\006\245\260\374\211\235\272\364\153\214\032\144\315\325\272
END
CKA_ISSUER MULTILINE_OCTAL
\label{eq:condition} $$ \060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$
\022\060\020\006\003\125\004\012\023\011\111\144\145\156\124\162
\145\156\124\162\165\163\164\040\120\165\142\154\151\143\040\123
\145\143\164\157\162\040\122\157\157\164\040\103\101\040\061
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\012\001\102\200\000\000\001\105\043\317\106\174\000\000
\000\002
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Entrust Root Certification Authority - G2"
# Issuer: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Serial Number: 1246989352 (0x4a538c28)
# Subject: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Not Valid Before: Tue Jul 07 17:25:54 2009
# Not Valid After: Sat Dec 07 17:55:54 2030
# Fingerprint (SHA-256):
43:DF:57:74:B0:3E:7F:EF:5F:E4:0D:93:1A:7B:ED:F1:BB:2E:6B:42:73:8C:4E:6D:38:41:10:3D:3A:A7:F3:39
# Fingerprint (SHA1): 8C:F4:27:FD:79:0C:3A:D1:66:06:8D:E8:1E:57:EF:BB:93:22:72:D4
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Entrust Root Certification Authority - G2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

#### CKA SUBJECT MULTILINE OCTAL

**END** 

CKA ID UTF8 "0"

#### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_co$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\112\123\214\050

**END** 

## CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \end{align} $$ \end{align$ 

\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055 \040\107\062\060\036\027\015\060\071\060\067\060\067\061\067\062 \065\065\064\132\027\015\063\060\061\062\060\067\061\065\065 \065\064\132\060\201\276\061\013\060\011\006\003\125\004\006\023 \002\125\123\061\026\060\024\006\003\125\004\012\023\015\105\156 \164\162\165\163\164\054\040\111\156\143\056\061\050\060\046\006 \003\125\004\013\023\037\123\145\145\040\167\167\167\056\145\156 \164\162\165\163\164\056\156\145\164\057\154\145\147\141\154\055 \164\145\162\155\163\061\071\060\067\006\003\125\004\013\023\060 \050\143\051\040\062\060\060\071\040\105\156\164\162\165\163\164 \054\040\111\156\143\056\040\055\040\146\157\162\040\141\165\164  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \061\062\060\060\006\003\125\004\003\023\051\105\156\164\162\165  $\\ 141\\164\\151\\157\\156\\040\\101\\165\\164\\150\\157\\162\\151\\164\\171\\040$ \055\040\107\062\060\202\001\042\060\015\006\011\052\206\110\206  $\label{eq:condition} $$ \367\015\001\001\001\005\000\003\202\001\017\000\060\202\001\012$ \002\202\001\001\000\272\204\266\162\333\236\014\153\342\231\351 \060\001\247\166\352\062\270\225\101\032\311\332\141\116\130\162 \317\376\366\202\171\277\163\141\006\012\245\047\330\263\137\323 \105\116\034\162\326\116\062\362\162\212\017\367\203\031\320\152 \200\200\000\105\036\260\307\347\232\277\022\127\047\034\243\150  $\label{eq:condition} $$ \057\012\207\275\152\153\016\136\145\363\034\167\325\324\205\215 $$$ \160\041\264\263\062\347\213\242\325\206\071\002\261\270\322\107 \316\344\311\111\304\073\247\336\373\124\175\127\276\360\350\156 \302\171\262\072\013\125\342\120\230\026\062\023\134\057\170\126 \301\302\224\263\362\132\344\047\232\237\044\327\306\354\320\233  $\\ \langle 045 \rangle 202 \rangle 343 \rangle 314 \rangle 302 \rangle 304 \rangle 105 \rangle 305 \rangle 214 \rangle 227 \rangle 172 \rangle 006 \rangle 153 \rangle 052 \rangle 021 \rangle 237 \rangle 172 \rangle$ \251\012\156\110\073\157\333\324\021\031\102\367\217\007\277\365 \123\137\234\076\364\027\054\346\151\254\116\062\114\142\167\352  $\label{eq:condition} $$ \267\350\345\273\064\274\031\213\256\234\121\347\267\176\265\123$ \261\063\042\345\155\317\160\074\032\372\342\233\147\266\203\364 \215\245\257\142\114\115\340\130\254\144\064\022\003\370\266\215 \224\143\044\244\161\002\003\001\000\001\243\102\060\100\060\016 \006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\017 \006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060 \035\006\003\125\035\016\004\026\004\024\152\162\046\172\320\036 \357\175\347\073\151\121\324\154\215\237\220\022\146\253\060\015  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001 $$$ \001\000\171\237\035\226\306\266\171\077\042\215\207\323\207\003 \004\140\152\153\232\056\131\211\163\021\254\103\321\365\023\377 \215\071\053\300\362\275\117\160\214\251\057\352\027\304\013\124 \236\324\033\226\230\063\074\250\255\142\242\000\166\253\131\151 \156\006\035\176\304\271\104\215\230\257\022\324\141\333\012\031 \106\107\363\353\367\143\301\100\005\100\245\322\267\364\265\232 \066\277\251\210\166\210\004\125\004\053\234\207\177\032\067\074 \176\055\245\032\330\324\211\136\312\275\254\075\154\330\155\257  $\label{eq:condition} $$ 325 \ 363 \ 166 \ 017 \ 315 \ 073 \ 210 \ 070 \ 042 \ 235 \ 154 \ 223 \ 232 \ 304 \ 075 \ 277 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070 \ 070$ 

 $\label{eq:co2033} $$ \202\033\145\077\246\017\135\252\374\345\262\025\312\265\255\306 $$ \274\075\320\204\350\352\006\162\260\115\071\062\170\277\076\021 $$ \234\013\244\235\232\041\363\360\233\013\060\170\333\301\334\207 $$ \103\376\274\143\232\312\305\302\034\311\307\215\377\073\022\130 $$ \010\346\266\075\354\172\054\116\373\203\226\316\014\074\151\207 $$ \124\163\244\163\302\223\377\121\020\254\025\124\001\330\374\005 $$ \261\211\241\177\164\203\232\111\327\334\116\173\212\110\157\213 $$ \105\366$$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Entrust Root Certification Authority - G2"

# Issuer: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Serial Number: 1246989352 (0x4a538c28)

# Subject: CN=Entrust Root Certification Authority - G2,OU="(c) 2009 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Not Valid Before: Tue Jul 07 17:25:54 2009 # Not Valid After: Sat Dec 07 17:55:54 2030

# Fingerprint (SHA-256):

43:DF:57:74:B0:3E:7F:EF:5F:E4:0D:93:1A:7B:ED:F1:BB:2E:6B:42:73:8C:4E:6D:38:41:10:3D:3A:A7:F3:39

# Fingerprint (SHA1): 8C:F4:27:FD:79:0C:3A:D1:66:06:8D:E8:1E:57:EF:BB:93:22:72:D4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "Entrust Root Certification Authority - G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \frac{375\171\014\072\321\146\006\215\350\036\127\357\273} (223\042\162\324)$$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:controller} $$ \000\201\276\0061\013\000\011\0006\003\125\004\0006\23\002\125\123\0061\026\000\0024\0006\0003\125\0004\012\023\015\105\156\164\162\165\163\164\050\125\0004\111\1156\143\056\061\050\060\006\003\125\0004\013\023\060\050\143\165\163\164\055\164\145\162\165\163\164\055\164\145\162\165\163\164\055\164\150\157\162\165\163\164\150\157\162\163\164\150\157\162\166\164\162\165\163\164\162\165\163\164\060\006\0006\0003\125\0004\003\125\0004\0157\156\154\171\061\062\060\1060\0006\0003\125\0004\0003\023\051\105\156\164\162\165\163\164\040\151\143\141\164\151$ 

```
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107
\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\004\112\123\214\050
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
#
# Certificate "Entrust Root Certification Authority - EC1"
# Issuer: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Serial Number:00:a6:8b:79:29:00:00:00:00:50:d0:91:f9
# Subject: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Not Valid Before: Tue Dec 18 15:25:36 2012
# Not Valid After: Fri Dec 18 15:55:36 2037
# Fingerprint (SHA-256):
02:ED:0E:B2:8C:14:DA:45:16:5C:56:67:91:70:0D:64:51:D7:FB:56:F0:B2:AB:1D:3B:8E:B0:70:E5:6E:DF:F5
# Fingerprint (SHA1): 20:D8:06:40:DF:9B:25:F5:12:25:3A:11:EA:F7:59:8A:EB:14:B5:47
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Entrust Root Certification Authority - EC1"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165
\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004
\013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165
\163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162
\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051
\040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111
\label{eq:condition} $$ \frac{156}{143}056040055040146157162040141165164150157162}$
\151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060
\061\006\003\125\004\003\023\052\105\156\164\162\165\163\164\040
\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151
\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105
\103\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
```

\060\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\015\000\246\213\171\051\000\000\000\000\120\320\221\371$ END$ 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\371\060\202\002\200\240\003\002\001\002\002\015\000 \246\213\171\051\000\000\000\000\120\320\221\371\060\012\006\010  $\label{eq:condition} $$ \052\206\110\316\075\004\003\003\060\201\277\061\013\060\011\006$ \003\125\004\006\023\002\125\123\061\026\060\024\006\003\125\004 \012\023\015\105\156\164\162\165\163\164\054\040\111\156\143\056  $\label{eq:condition} $$ \061\050\060\046\006\003\125\004\013\023\037\123\145\145\040\167 $$$ \167\167\056\145\156\164\162\165\163\164\056\156\145\164\057\154 \145\147\141\154\055\164\145\162\155\163\061\071\060\067\006\003 \125\004\013\023\060\050\143\051\040\062\060\061\062\040\105\156 \164\162\165\163\164\054\040\111\156\143\056\040\055\040\146\157 \162\040\141\165\164\150\157\162\151\172\145\144\040\165\163\145 \040\157\156\154\171\061\063\060\061\006\003\125\004\003\023\052 \105\156\164\162\165\163\164\040\122\157\157\164\040\103\145\162 \162\151\164\171\040\055\040\105\103\061\060\036\027\015\061\062 \061\062\061\070\061\065\062\065\063\066\132\027\015\063\067\061 \062\061\070\061\065\065\065\063\066\132\060\201\277\061\013\060 \011\006\003\125\004\006\023\002\125\123\061\026\060\024\006\003 \125\004\012\023\015\105\156\164\162\165\163\164\054\040\111\156 \143\056\061\050\060\046\006\003\125\004\013\023\037\123\145\145 \040\167\167\167\056\145\156\164\162\165\163\164\056\156\145\164  $\begin{tabular}{l} $$ \begin{tabular}{l} $057\154\145\147\141\154\055\164\145\162\155\163\061\071\060\067 \end{tabular}$  $\label{eq:condition} $$ \006\003\125\004\013\023\060\050\143\051\040\062\060\061\062\040 $$$ \105\156\164\162\165\163\164\054\040\111\156\143\056\040\055\040 \146\157\162\040\141\165\164\150\157\162\151\172\145\144\040\165 \163\145\040\157\156\154\171\061\063\060\061\006\003\125\004\003 \023\052\105\156\164\162\165\163\164\040\122\157\157\164\040\103 \145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164 \150\157\162\151\164\171\040\055\040\105\103\061\060\166\060\020 \006\007\052\206\110\316\075\002\001\006\005\053\201\004\000\042 \003\142\000\004\204\023\311\320\272\155\101\173\342\154\320\353

\125\137\146\002\032\044\364\133\211\151\107\343\270\302\175\361 \362\002\305\237\240\366\133\325\213\006\031\206\117\123\020\155  $\\ \\007\\ \\044\\ \\047\\ \\241\\ \\240\\ \\370\\ \\325\\ \\107\\ \\031\\ \\141\\ \\114\\ \\175\\ \\312\\ \\223\\ \\047\\ \\352$  $\label{eq:condition} $$ 164\014\357\157\226\011\376\143\354\160\135\066\255\147\167\256$ \311\235\174\125\104\072\242\143\121\037\365\343\142\324\251\107 \007\076\314\040\243\102\060\100\060\016\006\003\125\035\017\001 \001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001  $\label{eq:condition} $$ \001\377\004\005\060\003\001\001\377\060\035\006\003\125\035\016 $$$  $\label{eq:condition} $$ \004\026\004\024\267\143\347\032\335\215\351\010\246\125\203\244$$$ \340\152\120\101\145\021\102\111\060\012\006\010\052\206\110\316 \075\004\003\003\003\147\000\060\144\002\060\141\171\330\345\102  $\label{eq:condition} $$ 107\337\034\256\123\231\027\266\157\034\175\341\277\021\224\321 $$$ \003\210\165\344\215\211\244\212\167\106\336\155\141\357\002\365 \373\265\337\314\376\116\377\376\251\346\247\002\060\133\231\327 \205\067\006\265\173\010\375\353\047\213\112\224\371\341\372\247 \216\046\010\350\174\222\150\155\163\330\157\046\254\041\002\270 \231\267\046\101\133\045\140\256\320\110\032\356\006

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Entrust Root Certification Authority - EC1"

# Issuer: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Serial Number:00:a6:8b:79:29:00:00:00:00:50:d0:91:f9

# Subject: CN=Entrust Root Certification Authority - EC1,OU="(c) 2012 Entrust, Inc. - for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US

# Not Valid Before: Tue Dec 18 15:25:36 2012

# Not Valid After: Fri Dec 18 15:55:36 2037

# Fingerprint (SHA-256):

02:ED:0E:B2:8C:14:DA:45:16:5C:56:67:91:70:0D:64:51:D7:FB:56:F0:B2:AB:1D:3B:8E:B0:70:E5:6E:DF:F5

# Fingerprint (SHA1): 20:D8:06:40:DF:9B:25:F5:12:25:3A:11:EA:F7:59:8A:EB:14:B5:47

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority - EC1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \040\330\06\100\337\233\045\365\022\045\072\021\352\367\131\212\353\024\265\107$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \266\176\035\360\130\305\111\154\044\073\075\355\230\030\355\274$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\201\277\061\013\060\011\006\003\125\004\006\023\002\125\123$ 

\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004 \013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165 \163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162  $\label{eq:condition} $$ \frac{155}{163}061\\071\\060\\067\\006\\003\\125\\004\\013\\023\\060\\050\\143\\051$  $\label{eq:condition} $$ \040\062\060\061\062\040\105\156\164\162\165\163\164\054\040\111 $$$ \156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162 \151\172\145\144\040\165\163\145\040\157\156\154\171\061\063\060 \122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151 \157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\105 \103\061 **END** CKA SERIAL NUMBER MULTILINE OCTAL \002\015\000\246\213\171\051\000\000\000\000\120\320\221\371 **END** CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE # Certificate "CFCA EV ROOT" # Issuer: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN # Serial Number: 407555286 (0x184accd6) # Subject: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN # Not Valid Before: Wed Aug 08 03:07:01 2012 # Not Valid After: Mon Dec 31 03:07:01 2029 # Fingerprint (SHA-256): 5C:C3:D7:8E:4E:1D:5E:45:54:7A:04:E6:87:3E:64:F9:0C:F9:53:6D:1C:CC:2E:F8:00:F3:55:C4:C5:FD:70:FD # Fingerprint (SHA1): E2:B8:29:4B:55:84:AB:6B:58:C2:90:46:6C:AC:3F:B8:39:8F:84:83 CKA CLASS CK OBJECT CLASS CKO CERTIFICATE CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA PRIVATE CK BBOOL CK FALSE CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE CKA LABEL UTF8 "CFCA EV ROOT" CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA\_SUBJECT MULTILINE\_OCTAL  $\label{eq:condition} $$ \060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061 $$$  $\label{eq:condition} $$ \0.060\0.056\0.06\0.03\1.25\0.04\0.12\0.14\0.47\1.03\1.50\1.51\1.56\1.41\0.40$$$ \106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146 \151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164 \171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101 \040\105\126\040\122\117\117\124 **END** CKA\_ID UTF8 "0" CKA\_ISSUER MULTILINE\_OCTAL \060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061

**END** 

CKA SERIAL NUMBER MULTILINE OCTAL

\002\004\030\112\314\326

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\005\215\060\202\003\165\240\003\002\001\002\002\004\030 $$$ \112\314\326\060\015\006\011\052\206\110\206\367\015\001\001\013 \005\000\060\126\061\013\060\011\006\003\125\004\006\023\002\103 \116\061\060\060\056\006\003\125\004\012\014\047\103\150\151\156 \141\040\106\151\156\141\156\143\151\141\154\040\103\145\162\164 \151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162 \103\101\040\105\126\040\122\117\117\124\060\036\027\015\061\062 \060\070\060\070\060\063\060\067\060\061\132\027\015\062\071\061  $\label{eq:condition} $$ \062\063\060\063\060\067\060\061\132\060\126\061\013\060\011 $$$ \006\003\125\004\006\023\002\103\116\061\060\060\056\006\003\125 \004\012\014\047\103\150\151\156\141\040\106\151\156\141\156\143  $\verb| 151| 141| 154| 040| 103| 145| 162| 164| 151| 146| 151| 143| 141| 164| 151| 157|$ \156\040\101\165\164\150\157\162\151\164\171\061\025\060\023\006 \003\125\004\003\014\014\103\106\103\101\040\105\126\040\122\117 \117\124\060\202\002\042\060\015\006\011\052\206\110\206\367\015 \001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202  $\label{eq:condition} $$ \002\001\000\327\135\153\315\020\077\037\005\131\325\005\115\067 $$$ \261\016\354\230\053\216\025\035\372\223\113\027\202\041\161\020 \122\327\121\144\160\026\302\125\151\115\216\025\155\237\277\014  $\label{eq:condition} $$ \033\302\340\243\147\326\014\254\317\042\256\257\167\124\052\113$ \114\212\123\122\172\303\356\056\336\263\161\045\301\351\135\075 \356\241\057\243\367\052\074\311\043\035\152\253\035\241\247\361 \363\354\240\325\104\317\025\317\162\057\035\143\227\350\231\371 \375\223\244\124\200\114\122\324\122\253\056\111\337\220\315\270 \137\276\077\336\241\312\115\040\324\045\350\204\051\123\267\261 \210\037\377\372\332\220\237\012\251\055\101\077\261\361\030\051 \356\026\131\054\064\111\032\250\006\327\250\210\322\003\162\172  $\label{eq:condition} $$ \062\342\352\150\115\156\054\226\145\173\312\131\372\362\342\335 $$$ \356\060\054\373\314\106\254\304\143\353\157\177\066\053\064\163 \022\224\177\337\314\046\236\361\162\135\120\145\131\217\151\263  $\label{eq:condition} $$ \207\136\062\157\303\030\212\265\225\217\260\172\067\336\132\105$$ \073\307\066\341\357\147\321\071\323\227\133\163\142\031\110\055 \207\034\006\373\164\230\040\111\163\360\005\322\033\261\240\243 \267\033\160\323\210\151\271\132\326\070\364\142\334\045\213\170 \277\370\350\176\270\134\311\225\117\137\247\055\271\040\153\317 \153\335\365\015\364\202\267\364\262\146\056\020\050\366\227\132 \173\226\026\217\001\031\055\154\156\177\071\130\006\144\203\001

\203\203\303\115\222\335\062\306\207\244\067\351\026\316\252\055 \150\257\012\201\145\072\160\301\233\255\115\155\124\312\052\055 \113\205\033\263\200\346\160\105\015\153\136\065\360\177\073\270 \234\344\004\160\211\022\045\223\332\012\231\042\140\152\143\140 \116\166\006\230\116\275\203\255\035\130\212\045\205\322\307\145  $\label{eq:condition} $$ \036\05\216\306\337\266\306\341\177\212\004\041\025\051\164\360 $$$ \076\234\220\235\014\056\361\212\076\132\252\014\011\036\307\325 \074\243\355\227\303\036\064\372\070\371\010\016\343\300\135\053 \203\321\126\152\311\266\250\124\123\056\170\062\147\075\202\177 \164\320\373\341\266\005\140\271\160\333\216\013\371\023\130\157 \161\140\020\122\020\271\301\101\011\357\162\037\147\061\170\377 \226\005\215\002\003\001\000\001\243\143\060\141\060\037\006\003 \125\035\043\004\030\060\026\200\024\343\376\055\375\050\320\013 \265\272\266\242\304\277\006\252\005\214\223\373\057\060\017\006  $\label{eq:condition} $$ \003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\016$ \006\003\125\035\017\001\001\377\004\004\003\002\001\006\060\035  $\label{eq:condition} $$ \006\003\125\035\016\004\026\004\024\343\376\055\375\050\320\013$ \265\272\266\242\304\277\006\252\005\214\223\373\057\060\015\006 \011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001  $\label{eq:condition} $$ \000\045\306\272\153\353\207\313\336\202\071\226\075\360\104\247 $$$ \153\204\163\003\336\235\053\117\272\040\177\274\170\262\317\227 \260\033\234\363\327\171\056\365\110\266\322\373\027\210\346\323  $\label{eq:condition} $$ \frac{172\077\355\123\023\320\342\057\152\171\313\000\043\050\346\036}{1}$$ \067\127\065\211\204\302\166\117\064\066\255\147\303\316\101\006 \210\305\367\356\330\032\270\326\013\177\120\377\223\252\027\113 \214\354\355\122\140\262\244\006\352\116\353\364\153\031\375\353 \365\032\340\045\052\232\334\307\101\066\367\310\164\005\204\071 \225\071\326\013\073\244\047\372\010\330\134\036\370\004\140\122 \021\050\050\003\377\357\123\146\000\245\112\064\026\146\174\375 \011\244\256\236\147\032\157\101\013\153\006\023\233\217\206\161  $\label{eq:condition} $$ \05\264\057\215\211\146\063\051\166\124\232\021\370\047\372\262 $$$ \077\221\340\316\015\033\363\060\032\255\277\042\135\033\323\277 \045\005\115\341\222\032\177\231\237\074\104\223\312\324\100\111 \154\200\207\327\004\072\303\062\122\065\016\126\370\245\335\175 \304\213\015\021\037\123\313\036\262\027\266\150\167\132\340\324 \313\310\007\256\365\072\056\216\067\267\320\001\113\103\051\167 \214\071\227\217\202\132\370\121\345\211\240\030\347\150\177\135  $\label{eq:condition} $$ \012\056\373\243\107\016\075\246\043\172\306\001\307\217\310\136$ \277\155\200\126\276\212\044\272\063\352\237\341\062\021\236\361 \322\117\200\366\033\100\257\070\236\021\120\171\163\022\022\315 \346\154\235\054\210\162\074\060\201\006\221\042\352\131\255\332 \031\056\042\302\215\271\214\207\340\146\274\163\043\137\041\144 \143\200\110\365\240\074\030\075\224\310\110\101\035\100\272\136 \376\376\126\071\241\310\317\136\236\031\144\106\020\332\027\221 \267\005\200\254\213\231\222\175\347\242\330\007\013\066\047\347 \110\171\140\212\303\327\023\134\370\162\100\337\112\313\317\231  $\label{eq:condition} $$ \000\012\000\013\021\225\332\126\105\003\210\012\237\147\320\325$  $\label{eq:condition} $$ \frac{171}{261}\frac{250}{215}\frac{100}{155}\frac{302}{172}\frac{302}{170}\frac{372}{363}\frac{137}{144}\frac{222}{100} $$$   $\label{eq:control_state} $$ \frac{313\123\271\273\131\316\117\375\320\025\123\001\330\337\353\331\346\166\357\320\043\273\073\251\171\263\325\002\051\315\211\243\226\017\112\065\347\116\102\300\165\315\007\317\346\054\353\173\056$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "CFCA EV ROOT"
- # Issuer: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN
- # Serial Number: 407555286 (0x184accd6)
- # Subject: CN=CFCA EV ROOT,O=China Financial Certification Authority,C=CN
- # Not Valid Before: Wed Aug 08 03:07:01 2012
- # Not Valid After: Mon Dec 31 03:07:01 2029
- # Fingerprint (SHA-256):
- 5C:C3:D7:8E:4E:1D:5E:45:54:7A:04:E6:87:3E:64:F9:0C:F9:53:6D:1C:CC:2E:F8:00:F3:55:C4:C5:FD:70:FD
- # Fingerprint (SHA1): E2:B8:29:4B:55:84:AB:6B:58:C2:90:46:6C:AC:3F:B8:39:8F:84:83
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA PRIVATE CK BBOOL CK FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "CFCA EV ROOT"
- CKA CERT SHA1 HASH MULTILINE OCTAL
- $\label{eq:condition} $$ 342\270\051\113\125\204\253\153\130\302\220\106\154\254\077\270 $$$
- \071\217\204\203

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 164\341\266\355\046\172\172\104\060\063\224\253\173\047\201\060$$ 

END

CKA\_ISSUER MULTILINE\_OCTAL

\060\126\061\013\060\011\006\003\125\004\006\023\002\103\116\061

\106\151\156\141\156\143\151\141\154\040\103\145\162\164\151\146

 $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ 

\171\061\025\060\023\006\003\125\004\003\014\014\103\106\103\101

\040\105\126\040\122\117\117\124

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\004\030\112\314\326

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

 ${\tt CKA\_TRUST\_STEP\_UP\_APPROVED\ CK\_BBOOL\ CK\_FALSE}$ 

#

# Certificate "OISTE WISeKey Global Root GB CA"

- # Issuer: CN=OISTE WISeKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
- # Serial Number:76:b1:20:52:74:f0:85:87:46:b3:f8:23:1a:f6:c2:c0
- # Subject: CN=OISTE WISeKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
- # Not Valid Before: Mon Dec 01 15:00:32 2014
- # Not Valid After: Thu Dec 01 15:10:31 2039
- # Fingerprint (SHA-256):
- 6B:9C:08:E8:6E:B0:F7:67:CF:AD:65:CD:98:B6:21:49:E5:49:4A:67:F5:84:5E:7B:D1:ED:01:9F:27:B8:6B:D6
- # Fingerprint (SHA1): 0F:F9:40:76:18:D3:D7:6A:4B:98:F0:A8:35:9E:0C:FD:27:AC:CC:ED
- CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA MODIFIABLE CK BBOOL CK FALSE
- CKA\_LABEL UTF8 "OISTE WISeKey Global Root GB CA"
- CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509
- CKA\_SUBJECT MULTILINE\_OCTAL
- $\label{eq:condition} $$ \060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061$
- \171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
- $\label{eq:condition} $$ 105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144$$
- \157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
- $\label{eq:condition} $$ \frac{157}142\\141\\154\\040\\122\\157\\157\\164\\040\\107\\102\\040\\103\\101$
- **END**
- CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

- \060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
- $\label{eq:condition} $$ \020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145$
- \171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124
- \105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
- \157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
- \157\142\141\154\040\122\157\157\164\040\107\102\040\103\101
- END

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\166\261\040\122\164\360\205\207\106\263\370\043\032\366 \302\300

#### **END**

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\202\003\265\060\202\002\235\240\003\002\001\002\002\002\001\66 $$ \261\040\122\164\360\205\207\106\263\370\043\032\366\302\300\060 $$ \015\006\011\052\206\110\206\367\015\001\001\001\013\005\000\060\155 $$ \061\013\060\011\006\003\125\004\006\023\002\103\110\061\020\060 $$ \016\006\003\125\004\012\023\007\127\111\123\145\113\145\113\145\117\061 $$ \042\060\040\006\003\125\004\013\023\031\117\111\123\124\105\040 $$ \163\145\144\061\050\060\046\006\003\125\004\003\023\037\117\111 $$ \123\124\105\040\127\111\123\145\113\145\117\040\107\154\157\142 $$$ 

\141\154\040\122\157\157\164\040\107\102\040\103\101\060\036\027 \015\061\064\061\062\060\061\061\065\060\060\063\062\132\027\015 \063\071\061\062\060\061\061\065\061\060\063\061\132\060\155\061 \013\060\011\006\003\125\004\006\023\002\103\110\061\020\060\016 \006\003\125\004\012\023\007\127\111\123\145\113\145\171\061\042 \060\040\006\003\125\004\013\023\031\117\111\123\124\105\040\106 \157\165\156\144\141\164\151\157\156\040\105\156\144\157\162\163 \145\144\061\050\060\046\006\003\125\004\003\023\037\117\111\123  $\\ 124 \\ 105 \\ 040 \\ 127 \\ 111 \\ 123 \\ 145 \\ 113 \\ 145 \\ 171 \\ 040 \\ 107 \\ 154 \\ 157 \\ 142 \\ 141 \\$ \154\040\122\157\157\164\040\107\102\040\103\101\060\202\001\042 \060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003 \202\001\017\000\060\202\001\012\002\202\001\001\000\330\027\267 \034\112\044\052\326\227\261\312\342\036\373\175\070\357\230\365 \262\071\230\116\047\270\021\135\173\322\045\224\210\202\025\046  $\label{eq:condition} $$ \frac{33}{061}273\\250\\133\\041\\041\\053\\330\\017\\116\\237\\132\\361\\261$ \132\344\171\326\062\043\053\341\123\314\231\105\134\173\117\255  $\label{eq:condition} $$ \274\277\207\112\013\113\227\132\250\366\110\354\175\173\015\315$$ \041\006\337\236\025\375\101\212\110\267\040\364\241\172\033\127 \324\135\120\377\272\147\330\043\231\037\310\077\343\336\377\157 \133\167\261\153\156\270\311\144\367\341\312\101\106\016\051\161 \320\271\043\374\311\201\137\116\367\157\337\277\204\255\163\144 \273\267\102\216\151\366\324\166\035\176\235\247\270\127\212\121 \147\162\327\324\250\270\225\124\100\163\003\366\352\364\353\376 \050\102\167\077\235\043\033\262\266\075\200\024\007\114\056\117 \367\325\012\026\015\275\146\103\067\176\043\103\171\303\100\206 \365\114\051\332\216\232\255\015\245\004\207\210\036\205\343\351 \123\325\233\310\213\003\143\170\353\340\031\112\156\273\057\153  $\label{eq:condition} $$ \063\144\130\223\255\151\277\217\033\357\202\110\307\002\003\001 $$$ \000\001\243\121\060\117\060\013\006\003\125\035\017\004\004\003 \002\001\206\060\017\006\003\125\035\023\001\001\377\004\005\060  $\label{eq:condition} $$ \003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\065$$ \017\310\066\143\136\342\243\354\371\073\146\025\316\121\122\343 \221\232\075\060\020\006\011\053\006\001\004\001\202\067\025\001 \004\003\002\001\000\060\015\006\011\052\206\110\206\367\015\001 \001\013\005\000\003\202\001\001\000\100\114\373\207\262\231\201 \220\176\235\305\260\260\046\315\210\173\053\062\215\156\270\041 \161\130\227\175\256\067\024\257\076\347\367\232\342\175\366\161 \230\231\004\252\103\164\170\243\343\111\141\076\163\214\115\224 \340\371\161\304\266\026\016\123\170\037\326\242\207\057\002\071 \201\051\074\257\025\230\041\060\376\050\220\000\214\321\341\313 \372\136\310\375\370\020\106\073\242\170\102\221\027\164\125\012 \336\120\147\115\146\321\247\377\375\331\300\265\250\243\212\316  $\label{eq:condition} $$ 146\365\017\103\315\247\053\127\173\143\106\152\252\056\122\330 $$$ \364\355\341\155\255\051\220\170\110\272\341\043\252\243\211\354 \265\253\226\300\264\113\242\035\227\236\172\362\156\100\161\337 \150\361\145\115\316\174\005\337\123\145\251\245\360\261\227\004 \160\025\106\003\230\324\322\277\124\264\240\130\175\122\157\332  $\label{eq:condition} $$ 126\046\142\324\330\333\211\061\157\034\360\042\302\323\142\034$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

CKA NSS EMAIL DISTRUST AFTER CK BBOOL CK FALSE

- # Trust for "OISTE WISeKey Global Root GB CA"
- # Issuer: CN=OISTE WISeKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
- # Serial Number:76:b1:20:52:74:f0:85:87:46:b3:f8:23:1a:f6:c2:c0
- # Subject: CN=OISTE WISeKey Global Root GB CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
- # Not Valid Before: Mon Dec 01 15:00:32 2014
- # Not Valid After: Thu Dec 01 15:10:31 2039
- # Fingerprint (SHA-256):
- 6B:9C:08:E8:6E:B0:F7:67:CF:AD:65:CD:98:B6:21:49:E5:49:4A:67:F5:84:5E:7B:D1:ED:01:9F:27:B8:6B:D6
- # Fingerprint (SHA1): 0F:F9:40:76:18:D3:D7:6A:4B:98:F0:A8:35:9E:0C:FD:27:AC:CC:ED
- CKA CLASS CK OBJECT CLASS CKO NSS TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA MODIFIABLE CK BBOOL CK FALSE
- CKA\_LABEL UTF8 "OISTE WISeKey Global Root GB CA"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL
- $\label{eq:condition} $$ \017\371\100\166\030\323\327\152\113\230\360\250\065\236\014\375 $$$

\047\254\314\355

**END** 

#### CKA CERT MD5 HASH MULTILINE OCTAL

\244\353\271\141\050\056\267\057\230\260\065\046\220\231\121\035

**END** 

## CKA\_ISSUER MULTILINE\_OCTAL

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \020\020\166\261\040\122\164\360\205\207\106\263\370\043\032\366\302\300$ 

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "SZAFIR ROOT CA2"

#

- # Issuer: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL
- # Serial Number:3e:8a:5d:07:ec:55:d2:32:d5:b7:e3:b6:5f:01:eb:2d:dc:e4:d6:e4
- # Subject: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL
- # Not Valid Before: Mon Oct 19 07:43:30 2015
- # Not Valid After: Fri Oct 19 07:43:30 2035
- # Fingerprint (SHA-256):
- A1:33:9D:33:28:1A:0B:56:E5:57:D3:D3:2B:1C:E7:F9:36:7E:B0:94:BD:5F:A7:2A:7E:50:04:C8:DE:D7:CA:FE
- # Fingerprint (SHA1): E2:52:FA:95:3F:ED:DB:24:60:BD:6E:28:F3:9C:CC:CF:5E:B3:3F:DE
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA PRIVATE CK BBOOL CK FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "SZAFIR ROOT CA2"
- CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509
- CKA\_SUBJECT MULTILINE\_OCTAL
- \060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
- $\label{eq:condition} $$ \0.050\0.040\0.040\0.003\1.25\0.04\0.012\0.014\0.037\1.13\1.62\1.41\1.52\1.57\1.67\0.050\0.060\0.040\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060\0.060$
- $\\ 141 \\ 040 \\ 111 \\ 172 \\ 142 \\ 141 \\ 040 \\ 122 \\ 157 \\ 172 \\ 154 \\ 151 \\ 143 \\ 172 \\ 145 \\ 156$
- \151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
- \004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040 \103\101\062

**END** 

CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\076\212\135\007\354\125\322\062\325\267\343\266\137\001 \353\055\334\344\326\344

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\064\063\063\060\132\060\121\061\013\060\011\006\003\125\004\006 \023\002\120\114\061\050\060\046\006\003\125\004\012\014\037\113 \162\141\152\157\167\141\040\111\172\142\141\040\122\157\172\154  $\label{eq:label_label_label_label} $$ 151\143\172\145\156\151\157\167\141\040\123\056\101\056\061\030$$$ \060\026\006\003\125\004\003\014\017\123\132\101\106\111\122\040 \052\206\110\206\367\015\001\001\001\005\000\003\202\001\017\000 \060\202\001\012\002\202\001\001\000\267\274\076\120\250\113\315 \100\265\316\141\347\226\312\264\241\332\014\042\260\372\265\173 \166\000\167\214\013\317\175\250\206\314\046\121\344\040\075\205  $\label{eq:condition} $$ \014\326\130\343\347\364\052\030\235\332\321\256\046\356\353\123$  $\label{eq:condition} $\34\364\220\326\023\112\014\220\074\303\364\332\322\216\015\222$ \072\334\261\261\377\070\336\303\272\055\137\200\271\002\275\112 \235\033\017\264\303\302\301\147\003\335\334\033\234\075\263\260  $\label{eq:condition} $$ \36\000\036\250\064\107\273\232\353\376\013\024\275\066\204\332 $$$ \015\040\277\372\133\313\251\026\040\255\071\140\356\057\165\266  $\label{eq:control_equation} $$ 347\227\234\371\076\375\176\115\157\115\057\357\210\015\152\372$$ \335\361\075\156\040\245\240\022\264\115\160\271\316\327\162\073 \211\223\247\200\204\034\047\111\162\111\265\377\073\225\236\301 \314\310\001\354\350\016\212\012\226\347\263\246\207\345\326\371 \005\053\015\227\100\160\074\272\254\165\132\234\325\115\235\002 \012\322\113\233\146\113\106\007\027\145\255\237\154\210\000\334  $\\ \\ 042\\211\\340\\341\\144\\324\\147\\274\\061\\171\\141\\074\\273\\312\\101\\315$ \134\152\000\310\074\070\216\130\257\002\003\001\000\001\243\102 \001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003 \002\001\006\060\035\006\003\125\035\016\004\026\004\024\056\026 \251\112\030\265\313\314\365\157\120\363\043\137\370\135\347\254 \360\310\060\015\006\011\052\206\110\206\367\015\001\001\013\005 \000\003\202\001\001\000\265\163\370\003\334\131\133\035\166\351 \243\052\173\220\050\262\115\300\063\117\252\232\261\324\270\344 \047\377\251\226\231\316\106\340\155\174\114\242\070\244\006\160 \360\364\101\021\354\077\107\215\077\162\207\371\073\375\244\157 \053\123\000\340\377\071\271\152\007\016\353\035\034\366\242\162 \220\313\202\075\021\202\213\322\273\237\052\257\041\346\143\206 \235\171\031\357\367\273\014\065\220\303\212\355\117\017\365\314 \022\331\244\076\273\240\374\040\225\137\117\046\057\021\043\203  $\label{eq:condition} $$ \frac{116\\165\\007\\017\\277\\233\\321\\264\\035\\351\\020\\004\\376\\312\\140\\217$  $\label{eq:condition} $$ \242\114\270\255\317\341\220\017\315\256\012\307\135\173\267\120 $$$ \322\324\141\372\325\025\333\327\237\207\121\124\353\245\343\353 \311\205\240\045\040\067\373\216\316\014\064\204\341\074\201\262 \167\116\103\245\210\137\206\147\241\075\346\264\134\141\266\076 \333\376\267\050\305\242\007\256\265\312\312\215\052\022\357\227 \355\302\060\244\311\052\172\373\363\115\043\033\231\063\064\240  $\label{eq:condition} $$ \056\365\251\013\077\324\135\341\317\204\237\342\031\302\137\212$ \326\040\036\343\163\267

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

# CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "SZAFIR ROOT CA2"
# Issuer: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL
# Serial Number:3e:8a:5d:07:ec:55:d2:32:d5:b7:e3:b6:5f:01:eb:2d:dc:e4:d6:e4
# Subject: CN=SZAFIR ROOT CA2,O=Krajowa Izba Rozliczeniowa S.A.,C=PL
# Not Valid Before: Mon Oct 19 07:43:30 2015
# Not Valid After: Fri Oct 19 07:43:30 2035
# Fingerprint (SHA-256):
A1:33:9D:33:28:1A:0B:56:E5:57:D3:D3:2B:1C:E7:F9:36:7E:B0:94:BD:5F:A7:2A:7E:50:04:C8:DE:D7:CA:FE
# Fingerprint (SHA1): E2:52:FA:95:3F:ED:DB:24:60:BD:6E:28:F3:9C:CC:CF:5E:B3:3F:DE
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "SZAFIR ROOT CA2"
CKA CERT SHA1 HASH MULTILINE OCTAL
\342\122\372\225\077\355\333\044\140\275\156\050\363\234\314\317
\136\263\077\336
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\label{eq:condition} $$ \021\144\301\211\260\044\261\214\261\007\176\211\236\121\236\231 $$
END
CKA_ISSUER MULTILINE_OCTAL
\060\121\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\050\060\046\006\003\125\004\012\014\037\113\162\141\152\157\167
 \\ 141 \\ 040 \\ 111 \\ 172 \\ 142 \\ 141 \\ 040 \\ 122 \\ 157 \\ 172 \\ 154 \\ 151 \\ 143 \\ 172 \\ 145 \\ 156 
\151\157\167\141\040\123\056\101\056\061\030\060\026\006\003\125
\004\003\014\017\123\132\101\106\111\122\040\122\117\117\124\040
\103\101\062
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\024\076\212\135\007\354\125\322\062\325\267\343\266\137\001
\353\055\334\344\326\344
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Certum Trusted Network CA 2"
# Issuer: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies
S.A.,C=PL
# Serial Number:21:d6:d0:4a:4f:25:0f:c9:32:37:fc:aa:5e:12:8d:e9
```

# Subject: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies

S.A.,C=PL

# Not Valid Before: Thu Oct 06 08:39:56 2011 # Not Valid After : Sat Oct 06 08:39:56 2046

# Fingerprint (SHA-256):

B6:76:F2:ED:DA:E8:77:5C:D3:6C:B0:F6:3C:D1:D4:60:39:61:F4:9E:62:65:BA:01:3A:2F:03:07:B6:D0:B8:04

# Fingerprint (SHA1): D3:DD:48:3E:2B:BF:4C:05:E8:AF:10:F5:FA:76:26:CF:D3:DC:30:92

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum Trusted Network CA 2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \000\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114 $$ \061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145 $$ \164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040 $$ \123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103 $$ \145\162\164\165\155\040\101\165\164\157\162\151\164\171\061\044\060 $$ \042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124 $$ \162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103 $$ \101\040\062 $$$ 

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\201\200\61\013\060\011\006\003\125\004\006\0023\002\120\114 $$ \061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145 $$ \164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040 $$ \123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103 $$ \145\162\164\151\146\151\143\141\164 $$ \151\157\156\040\101\165\164\150\157\162\151\164\171\061\044\060 $$ \042\006\003\125\004\003\023\033\103\145\162\164\165\155\040\124 $$ \162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103 $$ \101\040\062$ 

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\041\326\320\112\117\045\017\311\062\067\374\252\136\022 \215\351

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\156\040\101\165\164\150\157\162\151\164\171\061\044\060\042\006 \003\125\004\003\023\033\103\145\162\164\165\155\040\124\162\165 \163\164\145\144\040\116\145\164\167\157\162\153\040\103\101\040 \062\060\042\030\017\062\060\061\061\061\060\060\066\060\070\063 \071\065\066\132\030\017\062\060\064\066\061\060\060\066\060\070 \063\071\065\066\132\060\201\200\061\013\060\011\006\003\125\004 \006\023\002\120\114\061\042\060\040\006\003\125\004\012\023\031 \125\156\151\172\145\164\157\040\124\145\143\150\156\157\154\157 \147\151\145\163\040\123\056\101\056\061\047\060\045\006\003\125 \004\013\023\036\103\145\162\164\165\155\040\103\145\162\164\151 \146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151 \164\171\061\044\060\042\006\003\125\004\003\023\033\103\145\162 \164\165\155\040\124\162\165\163\164\145\144\040\116\145\164\167 \157\162\153\040\103\101\040\062\060\202\002\042\060\015\006\011  $\label{eq:condition} $$ \052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000 $$$ \060\202\002\012\002\202\002\001\000\275\371\170\370\346\325\200  $\\014\\144\\235\\206\\033\\226\\144\\147\\077\\042\\072\\036\\165\\001\\175\\357$ \373\134\147\214\311\314\134\153\251\221\346\271\102\345\040\113 \233\332\233\173\271\231\135\331\233\200\113\327\204\100\053\047 \323\350\272\060\273\076\011\032\247\111\225\357\053\100\044\302 \227\307\247\356\233\045\357\250\012\000\227\205\132\252\235\334 \051\311\342\065\007\353\160\115\112\326\301\263\126\270\241\101  $\label{eq:condition} $$ \070\233\321\373\061\177\217\340\137\341\261\077\017\216\026\111 $$$ \140\327\006\215\030\371\252\046\020\253\052\323\320\321\147\215  $\label{eq:condition} $$ \031\06\276\107\060\325\056\162\321\305\143\332\347\143\171\104$$$ \176\113\143\044\211\206\056\064\077\051\114\122\213\052\247\300 \342\221\050\211\271\300\133\371\035\331\347\047\255\377\232\002 \227\301\306\120\222\233\002\054\275\251\271\064\131\012\277\204 \112\377\337\376\263\237\353\331\236\340\230\043\354\246\153\167 \026\052\333\314\255\073\034\244\207\334\106\163\136\031\142\150  $\label{eq:condition} $$ 105\127\344\220\202\102\273\102\326\360\141\340\301\243\075\146$$ \243\135\364\030\356\210\311\215\027\105\051\231\062\165\002\061 \356\051\046\310\153\002\346\265\142\105\177\067\025\132\043\150 \211\324\076\336\116\047\260\360\100\014\274\115\027\313\115\242 \263\036\320\006\132\335\366\223\317\127\165\231\365\372\206\032 \147\170\263\277\226\376\064\334\275\347\122\126\345\263\345\165 \173\327\101\221\005\334\135\151\343\225\015\103\271\374\203\226  $\label{eq:condition} $$ \071\225\173\154\200\132\117\023\162\306\327\175\051\172\104\272$ \122\244\052\325\101\106\011\040\376\042\240\266\133\060\215\274 \211\014\325\327\160\370\207\122\375\332\357\254\121\056\007\263 \116\376\320\011\332\160\357\230\372\126\346\155\333\265\127\113 \334\345\054\045\025\310\236\056\170\116\370\332\234\236\206\054 \312\127\363\032\345\310\222\213\032\202\226\172\303\274\120\022 \151\330\016\132\106\213\072\353\046\372\043\311\266\260\201\276 \102\000\244\370\326\376\060\056\307\322\106\366\345\216\165\375 \362\314\271\320\207\133\314\006\020\140\273\203\065\267\136\147 \336\107\354\231\110\361\244\241\025\376\255\214\142\216\071\125 \117\071\026\271\261\143\235\377\267\002\003\001\000\001\243\102

\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003 \001\001\377\060\035\006\003\125\035\016\004\026\004\024\266\241 \124\071\002\303\240\077\216\212\274\372\324\370\034\246\321\072  $\label{eq:condition} $$ \0.016\0.016\0.006\0.003\1.25\0.035\0.017\0.01\0.01\3.77\0.04\0.04\0.03\0.02 $$$  $\label{eq:condition} $$ \001\006\0015\006\011\052\206\110\206\367\015\001\001\015\005$  $\label{eq:condition} $$ \000\003\202\002\001\000\161\245\016\316\344\351\277\077\070\325 $$$ \211\132\304\002\141\373\114\305\024\027\055\213\117\123\153\020  $\label{eq:condition} $$ \027\374\145\204\307\020\111\220\336\333\307\046\223\210\046\157$ \160\326\002\136\071\240\367\217\253\226\265\245\023\134\201\024 \155\016\201\202\021\033\212\116\306\117\245\335\142\036\104\337  $\label{eq:condition} $$ \011\131\364\133\167\013\067\351\213\040\306\370\012\116\056\130 $$$ \034\353\063\320\317\206\140\311\332\373\200\057\236\114\140\204 \170\075\041\144\326\373\101\037\030\017\347\311\165\161\275\275 \134\336\064\207\076\101\260\016\366\271\326\077\011\023\226\024  $\label{eq:condition} $$ \057\336\232\035\132\271\126\316\065\072\260\137\160\115\136\343 $$$ \051\361\043\050\162\131\266\253\302\214\146\046\034\167\054\046 \166\065\213\050\247\151\240\371\073\365\043\335\205\020\164\311 \220\003\126\221\347\257\272\107\324\022\227\021\042\343\242\111 \224\154\347\267\224\113\272\055\244\332\063\213\114\246\104\377 \132\074\306\035\144\330\265\061\344\246\074\172\250\127\013\333 \355\141\032\313\361\316\163\167\143\244\207\157\114\121\070\326 \344\137\307\237\266\201\052\344\205\110\171\130\136\073\370\333  $\\ \\002\\202\\147\\301\\071\\333\\303\\164\\113\\075\\066\\036\\371\\051\\223\\210$ \150\133\250\104\031\041\360\247\350\201\015\054\350\223\066\264  $\label{eq:condition} $$ \067\262\312\260\033\046\172\232\045\037\232\232\232\200\236\113\052$$ \077\373\243\232\376\163\062\161\302\236\306\162\341\212\150\047 \361\344\017\264\304\114\245\141\223\370\227\020\007\052\060\045  $\label{eq:condition} $$ \frac{251}{271}\frac{310}{161}\frac{270}{357}\frac{314}{055}\frac{365}{340}\frac{365}{340}\frac{202}{250}$$$ \157\266\272\154\203\103\167\315\212\222\027\241\236\133\170\026 \075\105\342\063\162\335\341\146\312\231\323\311\305\046\375\015 \150\004\106\256\266\331\233\214\276\031\276\261\306\362\031\343 \134\002\312\054\330\157\112\007\331\311\065\332\100\165\362\304 \247\031\157\236\102\020\230\165\346\225\213\140\274\355\305\022 \327\212\316\325\230\134\126\226\003\305\356\167\006\065\377\317 \344\356\077\023\141\356\333\332\055\205\360\315\256\235\262\030 \011\105\303\222\241\162\027\374\107\266\240\013\054\361\304\336 \103\150\010\152\137\073\360\166\143\373\314\006\054\246\306\342 \016\265\271\276\044\217

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Certum Trusted Network CA 2"

<sup>#</sup> Issuer: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies S.A.,C=PL

<sup>#</sup> Serial Number:21:d6:d0:4a:4f:25:0f:c9:32:37:fc:aa:5e:12:8d:e9

<sup>#</sup> Subject: CN=Certum Trusted Network CA 2,OU=Certum Certification Authority,O=Unizeto Technologies

```
S.A.,C=PL
```

# Not Valid Before: Thu Oct 06 08:39:56 2011 # Not Valid After : Sat Oct 06 08:39:56 2046

# Fingerprint (SHA-256):

B6:76:F2:ED:DA:E8:77:5C:D3:6C:B0:F6:3C:D1:D4:60:39:61:F4:9E:62:65:BA:01:3A:2F:03:07:B6:D0:B8:04

# Fingerprint (SHA1): D3:DD:48:3E:2B:BF:4C:05:E8:AF:10:F5:FA:76:26:CF:D3:DC:30:92

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Certum Trusted Network CA 2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 323 \times 110 \times 076 \times 3277 \times 14 \times 005 \times 350 \times 257 \times 020 \times 365 \times 372 \times 166 \times 046 \times 317 \times 166 \times 166$ 

\323\334\060\222

**END** 

CKA CERT MD5 HASH MULTILINE OCTAL

\155\106\236\331\045\155\010\043\133\136\164\175\036\047\333\362

**END** 

CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \060\201\200\061\013\060\011\006\003\125\004\006\023\002\120\114$$ 

 $\label{eq:condition} $$ \061\042\060\040\006\003\125\004\012\023\031\125\156\151\172\145$$$ 

\164\157\040\124\145\143\150\156\157\154\157\147\151\145\163\040

 $\label{eq:condition} $$ 123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103$ 

\145\162\164\165\155\040\103\145\162\164\151\146\151\143\141\164

 $\label{eq:condition} $$ \frac{151\\157\\156\\040\\101\\165\\164\\150\\157\\162\\151\\164\\171\\061\\044\\060$$ 

\162\165\163\164\145\144\040\116\145\164\167\157\162\153\040\103

\101\040\062

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\020\041\326\320\112\117\045\017\311\062\067\374\252\136\022 $$$ 

\215\351

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

 ${\tt CKA\_TRUST\_EMAIL\_PROTECTION\ CK\_TRUST\ CKT\_NSS\_TRUSTED\_DELEGATOR}$ 

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Hellenic Academic and Research Institutions RootCA 2015"

#

# Issuer: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research Institutions Cert. Authority,L=Athens,C=GR

# Serial Number: 0 (0x0)

# Subject: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research

 $Institutions\ Cert.\ Authority, L=Athens, C=GR$ 

# Not Valid Before: Tue Jul 07 10:11:21 2015

# Not Valid After: Sat Jun 30 10:11:21 2040

# Fingerprint (SHA-256):

A0:40:92:9A:02:CE:53:B4:AC:F4:F2:FF:C6:98:1C:E4:49:6F:75:5E:6D:45:FE:0B:2A:69:2B:CD:52:52:3F:36

# Fingerprint (SHA1): 01:0C:06:95:A6:98:19:14:FF:BF:5F:C6:B0:B6:95:EA:29:E9:12:A6

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2015"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \000\201\246\061\013\060\011\006\003\125\0004\0006\023\002\107\122 $$ \001\017\060\015\006\003\125\0004\007\023\006\101\164\150\145\156 $$ \104\060\102\006\003\125\0004\012\023\073\110\145\154\154 $$ \145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156 $$ \144\040\122\145\163\145\141\162\143\150\040\111\156\164\151\157\156\163\104\171\061\100\060\0076\006\003\125\0004\003 $$ \023\067\110\145\154\145\156\151\143\040\101\143\141\144\145 $$ \155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150 $$$ 

\157\164\103\101\040\062\060\061\065

**END** 

CKA\_ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\000

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\202\006\013\060\202\003\363\240\003\002\001\0002\0001\0000\\ \000\015\006\011\052\206\110\206\367\015\0001\001\013\005\000\060\\ \201\246\061\013\060\011\006\003\125\004\0006\023\002\107\122\061\\ \017\060\015\006\003\125\004\007\023\006\101\164\150\145\156\163\\ \061\104\060\102\006\003\125\004\012\023\073\110\145\154\154\145\\ \156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\\ \040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\\ \165\164\151\157\156\163\040\103\145\162\164\056\040\101\165\164\\ \end{tabular}$ 

\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003\023 \067\110\145\154\154\145\156\151\143\040\101\143\141\144\145\155  $\label{eq:condition} $$ \frac{151}143\\040\\141\\156\\144\\040\\122\\145\\163\\145\\141\\162\\143\\150\\040$ \164\103\101\040\062\060\061\065\060\036\027\015\061\065\060\067 \060\067\061\060\061\061\062\061\132\027\015\064\060\060\066\063 \060\061\060\061\061\062\061\132\060\201\246\061\013\060\011\006 \003\125\004\006\023\002\107\122\061\017\060\015\006\003\125\004  $\label{eq:condition} $$ \007\023\006\101\164\150\145\156\163\061\104\060\102\006\003\125$$ \004\012\023\073\110\145\154\154\145\156\151\143\040\101\143\141 \144\145\155\151\143\040\141\156\144\040\122\145\163\145\141\162 \143\150\040\111\156\163\164\151\164\165\164\151\157\156\163\040 \103\145\162\164\056\040\101\165\164\150\157\162\151\164\171\061  $\label{eq:condition} $$ 100\060\076\006\003\125\004\003\023\067\110\145\154\154\154\156$  $\verb| 151| 143| 040| 101| 143| 141| 144| 145| 155| 151| 143| 040| 141| 156| 144| 040|$ \122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165  $\label{eq:condition} $$ 164\151\157\156\163\040\122\157\157\164\103\101\040\062\060\061$$ \065\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001 \001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002  $\label{eq:condition} $$ \001\000\302\370\251\077\033\211\374\074\074\004\135\075\220\066$$ \260\221\072\171\074\146\132\357\155\071\001\111\032\264\267\317 \177\115\043\123\267\220\000\343\023\052\050\246\061\361\221\000  $\label{eq:condition} $$ 343\050\354\256\041\101\316\037\332\375\175\022\133\001\203\017 $$$ \271\260\137\231\341\362\022\203\200\115\006\076\337\254\257\347 \241\210\153\061\257\360\213\320\030\063\270\333\105\152\064\364 \002\200\044\050\012\002\025\225\136\166\052\015\231\072\024\133 \366\313\313\123\274\023\115\001\210\067\224\045\033\102\274\042 \330\216\243\226\136\072\331\062\333\076\350\360\020\145\355\164 \341\057\247\174\257\047\064\273\051\175\233\266\317\011\310\345 \323\012\374\210\145\145\164\012\334\163\034\134\315\100\261\034  $\label{eq:condition} $$ 324 \times 266 \times 204 \times 14 \times 120 \times 17 \times 150 \times 16 \times 250 \times 131 \times 256 \times 302 \times 116 \times 202 \times 150 \times 1$ \242\065\335\024\364\037\377\262\167\325\207\057\252\156\175\044 \047\347\306\313\046\346\345\376\147\007\143\330\105\015\335\072 \131\145\071\130\172\222\231\162\075\234\204\136\210\041\270\325 \364\054\374\331\160\122\117\170\270\275\074\053\213\225\230\365 \263\321\150\317\040\024\176\114\134\137\347\213\345\365\065\201 \031\067\327\021\010\267\146\276\323\112\316\203\127\000\072\303 \201\370\027\313\222\066\135\321\243\330\165\033\341\213\047\352 \172\110\101\375\105\031\006\255\047\231\116\301\160\107\335\265 \237\201\123\022\345\261\214\110\135\061\103\027\343\214\306\172 \143\226\113\051\060\116\204\116\142\031\136\074\316\227\220\245 \177\001\353\235\340\370\213\211\335\045\230\075\222\266\176\357 \331\361\121\121\175\055\046\310\151\131\141\340\254\152\270\052 \066\021\004\172\120\275\062\204\276\057\334\162\325\327\035\026  $\label{eq:condition} $$ 107\344\107\146\040\077\364\226\305\257\216\001\172\245\017\172$ \144\365\015\030\207\331\256\210\325\372\204\301\072\300\151\050  $\begin{tabular}{l} $$ \begin{tabular}{l} $\begin{tabular}{l} $\b$  $\label{eq:condition} $$ \061\043\107\301\011\010\353\156\367\170\233\327\202\374\204\040 $$$ 

\231\111\031\266\022\106\261\373\105\125\026\251\243\145\254\234 \007\017\352\153\334\037\056\006\162\354\206\210\022\344\055\333 \137\005\057\344\360\003\323\046\063\347\200\302\315\102\241\027 \064\013\002\003\001\000\001\243\102\060\100\060\017\006\003\125 \035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003 \125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003 \125\035\016\004\026\004\024\161\025\147\310\310\311\275\165\135 \162\320\070\030\152\235\363\161\044\124\013\060\015\006\011\052 \206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\165 \273\155\124\113\252\020\130\106\064\362\142\327\026\066\135\010 \136\325\154\310\207\275\264\056\106\362\061\370\174\352\102\265 \223\026\125\334\241\014\022\240\332\141\176\017\130\130\163\144 \162\307\350\105\216\334\251\362\046\077\306\171\214\261\123\010  $\label{eq:condition} $$ \063\201\260\126\023\276\346\121\134\330\233\012\117\113\234\126 $$$  $\label{eq:condition} $$ 123\002\351\117\366\015\140\352\115\102\125\350\174\033\041\041 $$$ \323\033\072\314\167\362\270\220\361\150\307\371\132\376\372\055 \364\277\311\365\105\033\316\070\020\052\067\212\171\243\264\343 \011\154\205\206\223\377\211\226\047\170\201\217\147\343\106\164 \124\216\331\015\151\342\112\364\115\164\003\377\262\167\355\225 \147\227\344\261\305\253\277\152\043\350\324\224\342\104\050\142 \304\113\342\360\330\342\051\153\032\160\176\044\141\223\173\117 \003\062\045\015\105\044\053\226\264\106\152\277\112\013\367\232  $\label{eq:condition} $$ \frac{301}{254}032\\305\\147\\363\\157\\064\\322\\372\\163\\143\\214\\357\\026$ \260\250\244\106\052\370\353\022\354\162\264\357\370\053\176\214 \122\300\213\204\124\371\057\076\343\125\250\334\146\261\331\341 \137\330\263\214\131\064\131\244\253\117\154\273\037\030\333\165 \253\330\313\222\315\224\070\141\016\007\006\037\113\106\020\361  $\label{eq:condition} $$ \276\215\205\134\073\112\053\201\171\017\264\151\237\111\120 $$$ \227\115\367\016\126\135\300\225\152\302\066\303\033\150\311\365 \052\334\107\232\276\262\316\305\045\350\372\003\271\332\371\026  $\label{eq:condition} $$ \frac{221}{204}\frac{365}{034}\frac{310}{374}\frac{314}{327}\frac{321}{220}\frac{247}{137} $$ \157\072\004\274\315\170\211\013\216\017\057\243\252\117\242\033 \022\075\026\010\100\017\361\106\114\327\252\173\010\301\012\365 \155\047\336\002\217\312\303\265\053\312\351\353\310\041\123\070 \245\314\073\330\167\067\060\242\117\331\157\321\362\100\255\101 \172\027\305\326\112\065\211\267\101\325\174\206\177\125\115\203 \112\245\163\040\300\072\257\220\361\232\044\216\331\216\161\312 \173\270\206\332\262\217\231\076\035\023\015\022\021\356\324\253 \360\351\025\166\002\344\340\337\252\040\036\133\141\205\144\100 \251\220\227\015\255\123\322\132\035\207\152\000\227\145\142\264 \276\157\152\247\365\054\102\355\062\255\266\041\236\276\274 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Hellenic Academic and Research Institutions RootCA 2015"

<sup>#</sup> Issuer: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research

```
Institutions Cert. Authority,L=Athens,C=GR
# Serial Number: 0 (0x0)
# Subject: CN=Hellenic Academic and Research Institutions RootCA 2015,O=Hellenic Academic and Research
Institutions Cert. Authority, L=Athens, C=GR
# Not Valid Before: Tue Jul 07 10:11:21 2015
# Not Valid After: Sat Jun 30 10:11:21 2040
# Fingerprint (SHA-256):
A0:40:92:9A:02:CE:53:B4:AC:F4:F2:FF:C6:98:1C:E4:49:6F:75:5E:6D:45:FE:0B:2A:69:2B:CD:52:52:3F:36
# Fingerprint (SHA1): 01:0C:06:95:A6:98:19:14:FF:BF:5F:C6:B0:B6:95:EA:29:E9:12:A6
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Hellenic Academic and Research Institutions RootCA 2015"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\001\014\006\225\246\230\031\024\377\277\137\306\260\266\225\352
\051\351\022\246
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\312\377\342\333\003\331\313\113\351\017\255\204\375\173\030\316
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\201\246\061\013\060\011\006\003\125\004\006\023\002\107\122 $$
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\100\060\076\006\003\125\004\003
\023\067\110\145\154\154\154\145\156\151\143\040\101\143\141\144\145
\label{eq:condition} $$ \frac{155}{151}\frac{43}{040}\frac{141}{156}\frac{44}{040}\frac{122}{145}\frac{163}{145}\frac{141}{162}\frac{143}{150}$
\label{eq:condition} $$ 040\111\156\163\164\151\164\165\164\151\157\156\163\040\122\157$
\157\164\103\101\040\062\060\061\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "Hellenic Academic and Research Institutions ECC RootCA 2015"
# Issuer: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and Research
Institutions Cert. Authority, L=Athens, C=GR
# Serial Number: 0 (0x0)
```

# Subject: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and

Research Institutions Cert. Authority, L=Athens, C=GR

# Not Valid Before: Tue Jul 07 10:37:12 2015

# Not Valid After: Sat Jun 30 10:37:12 2040

# Fingerprint (SHA-256):

44:B5:45:AA:8A:25:E6:5A:73:CA:15:DC:27:FC:36:D2:4C:1C:B9:95:3A:06:65:39:B1:15:82:DC:48:7B:48:33

# Fingerprint (SHA1): 9F:F1:71:8D:92:D5:9A:F3:7D:74:97:B4:BC:6F:84:68:0B:BA:B6:66

 ${\tt CKA\_CLASS\ CK\_OBJECT\_CLASS\ CKO\_CERTIFICATE}$ 

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Hellenic Academic and Research Institutions ECC RootCA 2015"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\201\252\061\013\060\011\006\003\125\004\006\023\002\107\122 $$$ 

 $\label{eq:condition} $$ \0061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156$$ 

\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156

 $\\ 144 \\ 040 \\ 122 \\ 145 \\ 163 \\ 145 \\ 141 \\ 162 \\ 143 \\ 150 \\ 040 \\ 111 \\ 156 \\ 163 \\ 164 \\ 151 \\$ 

 $\\ \\023\\ \\073\\ \\110\\ \\145\\ \\154\\ \\154\\ \\145\\ \\156\\ \\151\\ \\143\\ \\040\\ \\101\\ \\143\\ \\141\\ \\144\\ \\145$ 

 $\label{eq:condition} $$ \frac{155}{151}\frac{43}{040}\frac{141}{156}\frac{44}{040}\frac{122}{145}\frac{163}{145}\frac{141}{162}\frac{143}{150}$$ 

\040\111\156\163\164\151\164\165\164\151\157\156\163\040\105\103

 $\label{eq:condition} $$ 103\040\122\157\157\164\103\101\040\062\060\061\065$$ 

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

\060\201\252\061\013\060\011\006\003\125\004\006\023\002\107\122

\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156

 $\\ 145 \\ 156 \\ 151 \\ 143 \\ 040 \\ 101 \\ 143 \\ 141 \\ 144 \\ 145 \\ 155 \\ 151 \\ 143 \\ 040 \\ 141 \\ 156$ 

 $\\ 144 \\ 040 \\ 122 \\ 145 \\ 163 \\ 145 \\ 141 \\ 162 \\ 143 \\ 150 \\ 040 \\ 111 \\ 156 \\ 163 \\ 164 \\ 151 \\$ 

\164\150\157\162\151\164\171\061\104\060\102\006\003\125\004\003

\023\073\110\145\154\154\145\156\151\143\040\101\143\141\144\145\\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150

\040\111\156\163\164\151\164\165\164\151\157\156\163\040\105\103

\103\040\122\157\157\164\103\101\040\062\060\061\065

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\verb|002|001|000|$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\012\006\010\052\206\110\316\075\004\003\002\060\201\252\061 $$$ 

 $\label{eq:condition} $$ \003\000\011\006\003\125\004\006\023\002\107\122\061\017\060\015 $$$ 

 $\label{eq:condition} $$ \006\003\125\004\007\023\006\101\164\150\145\156\163\061\104\060$$$ 

\102\006\003\125\004\012\023\073\110\145\154\154\145\156\151\143 \040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145 \163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151 \157\156\163\040\103\145\162\164\056\040\101\165\164\150\157\162 \151\164\171\061\104\060\102\006\003\125\004\003\023\073\110\145  $\label{eq:condition} $$ \frac{154}154\frac{145}156\frac{151}143\sqrt{040}101\frac{143}141\frac{144}145\frac{155}151\frac{143}040}{101} $$$ \141\156\144\040\122\145\163\145\141\162\143\150\040\111\156\163 \157\164\103\101\040\062\060\061\065\060\036\027\015\061\065\060 \067\060\067\061\060\063\067\061\062\132\027\015\064\060\066  $\label{eq:condition} $$ \063\060\061\060\063\067\061\062\132\060\201\252\061\013\060\011 $$$  $\label{eq:condition} $$ \006\003\125\004\006\023\002\107\122\061\017\060\015\006\003\125\$ \004\007\023\006\101\164\150\145\156\163\061\104\060\102\006\003  $\\ 141\\144\\145\\155\\151\\143\\040\\141\\156\\144\\040\\122\\145\\163\\145\\141$ \162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163  $\label{eq:condition} $$ \040\103\145\162\164\056\040\101\165\164\150\157\162\151\164\171 $$$ \061\104\060\102\006\003\125\004\003\023\073\110\145\154\154\145 \156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144  $\\ \\ 040\\ \\ 122\\ \\ 145\\ \\ 163\\ \\ 145\\ \\ 141\\ \\ 162\\ \\ 143\\ \\ 150\\ \\ 040\\ \\ 111\\ \\ 156\\ \\ 163\\ \\ 164\\ \\ 151\\ \\ 164$ \165\164\151\157\156\163\040\105\103\103\040\122\157\157\164\103 \101\040\062\060\061\065\060\166\060\020\006\007\052\206\110\316 \101\350\113\202\204\134\342\370\061\021\231\206\144\116\011\045 \057\235\101\057\012\256\065\117\164\225\262\121\144\153\215\153 \346\077\160\225\360\005\104\107\246\162\070\120\166\225\002\132 \216\256\050\236\371\055\116\231\357\054\110\157\114\045\051\350  $\label{eq:condition} $$ \frac{321}{161}\frac{33}{337}\frac{35}{301}\frac{65}{67}\frac{264}{327}\frac{372}{173}\frac{172}{102}\frac{234}{152} $$$ \012\126\132\174\151\013\252\200\011\044\154\176\301\106\243\102 \060\100\060\017\006\003\125\035\023\001\001\377\004\005\060\003  $\label{eq:condition} $$ \001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\$ \002\001\006\060\035\006\003\125\035\016\004\026\004\024\264\042 \013\202\231\044\001\016\234\273\344\016\375\277\373\227\040\223 \231\052\060\012\006\010\052\206\110\316\075\004\003\002\003\147 \000\060\144\002\060\147\316\026\142\070\242\254\142\105\247\251 \225\044\300\032\047\234\062\073\300\300\325\272\251\347\370\004 \103\123\205\356\122\041\336\235\365\045\203\076\236\130\113\057 \327\147\023\016\041\002\060\005\341\165\001\336\150\355\052\037 \162\041\027\313\042\101\016\214\023\230\070\232\124\155\233\312 \342\174\352\002\130\042\221

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Hellenic Academic and Research Institutions ECC RootCA 2015"

<sup>#</sup> Issuer: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and Research

```
Institutions Cert. Authority,L=Athens,C=GR
# Serial Number: 0 (0x0)
# Subject: CN=Hellenic Academic and Research Institutions ECC RootCA 2015,O=Hellenic Academic and
Research Institutions Cert. Authority, L=Athens, C=GR
# Not Valid Before: Tue Jul 07 10:37:12 2015
# Not Valid After: Sat Jun 30 10:37:12 2040
# Fingerprint (SHA-256):
44:B5:45:AA:8A:25:E6:5A:73:CA:15:DC:27:FC:36:D2:4C:1C:B9:95:3A:06:65:39:B1:15:82:DC:48:7B:48:33
# Fingerprint (SHA1): 9F:F1:71:8D:92:D5:9A:F3:7D:74:97:B4:BC:6F:84:68:0B:BA:B6:66
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Hellenic Academic and Research Institutions ECC RootCA 2015"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\237\361\161\215\222\325\232\363\175\164\227\264\274\157\204\150
\013\272\266\146
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\201\345\264\027\353\302\365\341\113\015\101\173\111\222\376\357
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\201\252\061\013\060\011\006\003\125\004\006\023\002\107\122 $$
\061\017\060\015\006\003\125\004\007\023\006\101\164\150\145\156
\163\061\104\060\102\006\003\125\004\012\023\073\110\145\154\154
\145\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156
\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151
\164\165\164\151\157\156\163\040\103\145\162\164\056\040\101\165
\164\150\157\162\151\164\171\061\104\060\102\006\003\125\004\003
\023\073\110\145\154\154\154\145\156\151\143\040\101\143\141\144\145
\label{eq:condition} $$ \frac{155}{151}\frac{43}{040}\frac{141}{156}\frac{44}{040}\frac{122}{145}\frac{163}{145}\frac{141}{162}\frac{143}{150}$
\040\111\156\163\164\151\164\165\164\151\157\156\163\040\105\103
\103\040\122\157\157\164\103\101\040\062\060\061\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "ISRG Root X1"
# Issuer: CN=ISRG Root X1,O=Internet Security Research Group,C=US
# Serial Number:00:82:10:cf:b0:d2:40:e3:59:44:63:e0:bb:63:82:8b:00
# Subject: CN=ISRG Root X1,O=Internet Security Research Group,C=US
```

# Not Valid Before: Thu Jun 04 11:04:38 2015

# Not Valid After: Mon Jun 04 11:04:38 2035

# Fingerprint (SHA-256):

96:BC:EC:06:26:49:76:F3:74:60:77:9A:CF:28:C5:A7:CF:E8:A3:C0:AA:E1:1A:8F:FC:EE:05:C0:BD:DF:08:C6

# Fingerprint (SHA1): CA:BD:2A:79:A1:07:6A:31:F2:1D:25:36:35:CB:03:9D:43:29:A5:E8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "ISRG Root X1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000117\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$ \051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156 $$ \145\164\040\122\145\163\145 $$ \141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003 $$ \125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130 $$ \061$$ 

**END** 

CKA\_ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

**END** 

## CKA SERIAL NUMBER MULTILINE OCTAL

\002\021\000\202\020\317\260\322\100\343\131\104\143\340\273\143 \202\213\000

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:constraint} $$ \end{align} $$ \end{alig$ 

\061\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001 \001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002 \001\000\255\350\044\163\364\024\067\363\233\236\053\127\050\034 \207\276\334\267\337\070\220\214\156\074\346\127\240\170\367\165 \302\242\376\365\152\156\366\000\117\050\333\336\150\206\154\104 \223\266\261\143\375\024\022\153\277\037\322\352\061\233\041\176 \321\063\074\272\110\365\335\171\337\263\270\377\022\361\041\232 \113\301\212\206\161\151\112\146\146\154\217\176\074\160\277\255  $\label{eq:condition} $$ \051\042\006\363\344\300\346\200\256\342\113\217\267\231\176\224 $$$ \003\237\323\107\227\174\231\110\043\123\350\070\256\117\012\157 \203\056\321\111\127\214\200\164\266\332\057\320\070\215\173\003 \160\041\033\165\362\060\074\372\217\256\335\332\143\253\353\026 \117\302\216\021\113\176\317\013\350\377\265\167\056\364\262\173 \112\340\114\022\045\014\160\215\003\051\240\341\123\044\354\023  $\label{eq:condition} $$ \frac{331}{356} \frac{031}{277} \frac{263}{112} \frac{11}{214} \frac{11}{243} \frac{141}{121} \frac{336}{254} \frac{207}{1221} \frac{11}{243} \frac{141}{121} \frac{1336}{254} \frac{1207}{1221} \frac{11}{243} \frac{141}{121} \frac{1336}{1221} \frac{141}{121} \frac{1336}{1221} \frac{141}{121} \frac{1336}{1221} \frac{141}{121} \frac{141$ \007\224\364\143\161\354\056\342\157\133\230\201\341\211\134\064 \171\154\166\357\073\220\142\171\346\333\244\232\057\046\305\320 \020\341\016\336\331\020\216\026\373\267\367\250\367\307\345\002 \007\230\217\066\010\225\347\342\067\226\015\066\165\236\373\016 \162\261\035\233\274\003\371\111\005\330\201\335\005\264\052\326 \101\351\254\001\166\225\012\017\330\337\325\275\022\037\065\057 \050\027\154\322\230\301\250\011\144\167\156\107\067\272\316\254  $\label{eq:condition} $$ \frac{131}{136}\frac{35}{177}\frac{326}{211}\frac{305}{006}\frac{101}{051}\frac{076}{131}\frac{335}{076} $$$ \046\365\044\311\021\247\132\243\114\100\037\106\241\231\265\247 \072\121\156\206\073\236\175\162\247\022\005\170\131\355\076\121 \170\025\013\003\217\215\320\057\005\262\076\173\112\034\113\163 \005\022\374\306\352\340\120\023\174\103\223\164\263\312\164\347 \216\037\001\010\320\060\324\133\161\066\264\007\272\301\060\060 \134\110\267\202\073\230\246\175\140\212\242\243\051\202\314\272 \275\203\004\033\242\203\003\101\241\326\005\361\033\302\266\360  $\verb|250|174|206|073|106|250|110|052|210|334|166|232|166|277|037|152|$ \245\075\031\217\353\070\363\144\336\310\053\015\012\050\377\367 \333\342\025\102\324\042\320\047\135\341\171\376\030\347\160\210 \255\116\346\331\213\072\306\335\047\121\156\377\274\144\365\063 \103\117\002\003\001\000\001\243\102\060\100\060\016\006\003\125 \035\017\001\001\377\004\004\003\002\001\006\060\017\006\003\125 \035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003 \125\035\016\004\026\004\024\171\264\131\346\173\266\345\344\001  $\label{eq:condition} $$ 163\200\010\210\310\032\130\366\351\233\156\060\015\006\011\052$ \206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\125 \037\130\251\274\262\250\120\320\014\261\330\032\151\040\047\051 \010\254\141\165\134\212\156\370\202\345\151\057\325\366\126\113 \271\270\163\020\131\323\041\227\176\347\114\161\373\262\322\140 \255\071\250\013\352\027\041\126\205\361\120\016\131\353\316\340 \131\351\272\311\025\357\206\235\217\204\200\366\344\351\221\220 \334\027\233\142\033\105\360\146\225\322\174\157\302\352\073\357 \037\317\313\326\256\047\361\251\260\310\256\375\175\176\232\372 \042\004\353\377\331\177\352\221\053\042\261\027\016\217\362\212

\064\133\130\330\374\001\311\124\271\270\046\314\212\210\063\211 \114\055\204\074\202\337\356\226\127\005\272\054\273\367\304\267  $\label{eq:condition} $$ 307\116\073\202\276\061\310\042\163\163\222\321\302\200\244\071 $$$  $\label{eq:condition} $$ \071\020\063\043\202\114\074\237\206\262\125\230\035\276\051\206$  $\label{eq:condition} $$ \frac{214}042\233\236\342\153\073\127\072\202\160\115\334\011\307\211}{211} $$$ \313\012\007\115\154\350\135\216\311\357\316\253\307\273\265\053 \116\105\326\112\320\046\314\345\162\312\010\152\245\225\343\025 \241\367\244\355\311\054\137\245\373\377\254\050\002\056\276\327 \173\273\343\161\173\220\026\323\007\136\106\123\174\067\007\102 \214\323\304\226\234\325\231\265\052\340\225\032\200\110\256\114 \071\007\316\314\107\244\122\225\053\272\270\373\255\322\063\123 \175\345\035\115\155\325\241\261\307\102\157\346\100\047\065\134 \243\050\267\007\215\347\215\063\220\347\043\237\373\120\234\171  $\label{eq:condition} $$ \frac{154}{106}\frac{325}{264}\frac{263}{226}\frac{156}{176}\frac{233}{014}\frac{226}{072}\frac{270}{122}\frac{55}{055} $$$  $\label{eq:condition} $$ \077\326\133\341\373\010\302\204\376\044\250\243\211\332\254\152$ \341\030\052\261\250\103\141\133\323\037\334\073\215\166\362\055 \350\215\165\337\027\063\154\075\123\373\173\313\101\137\377\334 \242\320\141\070\341\226\270\254\135\213\067\327\165\325\063\300 \231\021\256\235\101\301\162\165\204\276\002\101\102\137\147\044  $\label{eq:condition} $$ \frac{110}{224}\frac{321}{233}\frac{047}{276}\frac{007}{077}\frac{271}{270}\frac{117}{201}\frac{164}{121}\frac{341}{172}$ \267\355\235\043\342\276\340\325\050\004\023\074\061\003\236\335 \172\154\217\306\007\030\306\177\336\107\216\077\050\236\004\006  $\label{eq:condition} $$ \frac{317}{245}124 \cdot 064 \cdot 167 \cdot 275 \cdot 354 \cdot 211 \cdot 233 \cdot 351 \cdot 027 \cdot 103 \cdot 337 \cdot 133 \cdot 333 \cdot 137 \cdot 124 \cdot$ \376\216\036\127\242\315\100\235\176\142\042\332\336\030\047 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "ISRG Root X1"
```

96:BC:EC:06:26:49:76:F3:74:60:77:9A:CF:28:C5:A7:CF:E8:A3:C0:AA:E1:1A:8F:FC:EE:05:C0:BD:DF:08:C6

# Fingerprint (SHA1): CA:BD:2A:79:A1:07:6A:31:F2:1D:25:36:35:CB:03:9D:43:29:A5:E8

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ISRG Root X1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \frac{312}{275}052\\171\\241\\007\\152\\061\\362\\035\\045\\066\\065\\313\\003\\235$ 

\103\051\245\350

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

<sup>#</sup> Issuer: CN=ISRG Root X1,O=Internet Security Research Group,C=US

<sup>#</sup> Serial Number:00:82:10:cf:b0:d2:40:e3:59:44:63:e0:bb:63:82:8b:00

<sup>#</sup> Subject: CN=ISRG Root X1,O=Internet Security Research Group,C=US

<sup>#</sup> Not Valid Before: Thu Jun 04 11:04:38 2015

<sup>#</sup> Not Valid After : Mon Jun 04 11:04:38 2035

<sup>#</sup> Fingerprint (SHA-256):

```
\014\322\371\340\332\027\163\351\355\206\115\245\343\160\347\116
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\11\006\003\125\004\006\023\002\125\123\061 $$
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003
\125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130
\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\label{eq:condition} $$ \002\021\000\202\020\317\260\322\100\343\131\104\143\340\273\143
\202\213\000
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "AC RAIZ FNMT-RCM"
# Issuer: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
# Serial Number:5d:93:8d:30:67:36:c8:06:1d:1a:c7:54:84:69:07
# Subject: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
# Not Valid Before: Wed Oct 29 15:59:56 2008
# Not Valid After: Tue Jan 01 00:00:00 2030
# Fingerprint (SHA-256):
EB:C5:57:0C:29:01:8C:4D:67:B1:AA:12:7B:AF:12:F7:03:B4:61:1E:BC:17:B7:DA:B5:57:38:94:17:9B:93:FA
# Fingerprint (SHA1): EC:50:35:07:B2:15:C4:95:62:19:E2:A8:9A:5B:42:99:2C:4C:2C:20
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA LABEL UTF8 "AC RAIZ FNMT-RCM"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA SUBJECT MULTILINE OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040
\122\101\111\132\040\106\116\115\124\055\122\103\115
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\021\060\017\006\003\125\004\012\014\010\106\116\115\124\055\122
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040
\122\101\111\132\040\106\116\115\124\055\122\103\115
```

**END** 

## CKA SERIAL NUMBER MULTILINE OCTAL

\002\017\135\223\215\060\147\066\310\006\035\032\307\124\204\151 \007

**END** 

## CKA VALUE MULTILINE OCTAL

\060\202\005\203\060\202\003\153\240\003\002\001\002\002\017\135 \223\215\060\147\066\310\006\035\032\307\124\204\151\007\060\015  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\013\005\000\060\073\061 $$$ \013\060\011\006\003\125\004\006\023\002\105\123\061\021\060\017 \006\003\125\004\012\014\010\106\116\115\124\055\122\103\115\061  $\label{eq:condition} $$ \031\060\027\006\003\125\004\013\014\020\101\103\040\122\101\111$ \132\040\106\116\115\124\055\122\103\115\060\036\027\015\060\070 \061\060\062\071\061\065\065\071\065\066\132\027\015\063\060\060  $\label{eq:condition} $$ \061\060\060\060\060\060\060\060\073\061\013\060\011 $$$ \006\003\125\004\006\023\002\105\123\061\021\060\017\006\003\125 \006\003\125\004\013\014\020\101\103\040\122\101\111\132\040\106 \116\115\124\055\122\103\115\060\202\002\042\060\015\006\011\052 \206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060 \202\002\012\002\202\002\001\000\272\161\200\172\114\206\156\177 \310\023\155\300\306\175\034\000\227\217\054\014\043\273\020\232 \100\251\032\267\207\210\370\233\126\152\373\346\173\216\213\222 \216\247\045\135\131\021\333\066\056\267\121\027\037\251\010\037 \004\027\044\130\252\067\112\030\337\345\071\324\127\375\327\301 \054\221\001\221\342\042\324\003\300\130\374\167\107\354\217\076 \164\103\272\254\064\215\115\070\166\147\216\260\310\157\060\063 \130\161\134\264\365\153\156\324\001\120\270\023\176\154\112\243 \111\321\040\031\356\274\300\051\030\145\247\336\376\357\335\012 \220\041\347\032\147\222\102\020\230\137\117\060\274\076\034\105 \264\020\327\150\100\024\300\100\372\347\167\027\172\346\013\217 \145\133\074\331\232\122\333\265\275\236\106\317\075\353\221\005 \002\300\226\262\166\114\115\020\226\073\222\372\234\177\017\231 \337\276\043\065\105\036\002\134\376\265\250\233\231\045\332\136 \363\042\303\071\365\344\052\056\323\306\037\304\154\252\305\034 \152\001\005\112\057\322\305\301\250\064\046\135\146\245\322\002 \041\371\030\267\006\365\116\231\157\250\253\114\121\350\317\120 \030\305\167\310\071\011\054\111\222\062\231\250\273\027\027\171 \260\132\305\346\243\304\131\145\107\065\203\136\251\350\065\013 \231\273\344\315\040\306\233\112\006\071\265\150\374\042\272\356 \125\214\053\116\352\363\261\343\374\266\231\232\325\102\372\161 \115\010\317\207\036\152\161\175\371\323\264\351\245\161\201\173 \302\116\107\226\245\366\166\205\243\050\217\351\200\156\201\123 \245\155\137\270\110\371\302\371\066\246\056\111\377\270\226\302 \214\007\263\233\210\130\374\353\033\034\336\055\160\342\227\222 \060\241\211\343\274\125\250\047\326\113\355\220\255\213\372\143 \045\131\055\250\065\335\312\227\063\274\345\315\307\235\321\354 \357\136\016\112\220\006\046\143\255\271\331\065\055\007\272\166

\145\054\254\127\217\175\364\007\224\327\201\002\226\135\243\007 \111\325\172\320\127\371\033\347\123\106\165\252\260\171\102\313 \150\161\010\351\140\275\071\151\316\364\257\303\126\100\307\255 \122\242\011\344\157\206\107\212\037\353\050\047\135\203\040\257 \004\311\154\126\232\213\106\365\002\003\001\000\001\243\201\203 \060\201\200\060\017\006\003\125\035\023\001\001\377\004\005\060 \003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004 \003\002\001\006\060\035\006\003\125\035\016\004\026\004\024\367 \175\305\375\304\350\232\033\167\144\247\365\035\240\314\277\207 \140\232\155\060\076\006\003\125\035\040\004\067\060\065\060\063 \006\004\125\035\040\000\060\053\060\051\006\010\053\006\001\005 \056\143\145\162\164\056\146\156\155\164\056\145\163\057\144\160  $\label{eq:condition} $$ 143\163\057\060\015\006\011\052\206\110\206\367\015\001\001\013$ \234\121\145\233\234\042\242\212\014\205\363\163\051\153\115\376  $\label{eq:condition} $$ \001\342\251\014\143\001\277\004\147\245\235\230\137\375\001\023$ \372\354\232\142\351\206\376\266\142\322\156\114\224\373\300\165 \105\174\145\014\370\262\067\317\254\017\317\215\157\371\031\367 \217\354\036\362\160\236\360\312\270\357\267\377\166\067\166\133 \366\156\210\363\257\142\062\042\223\015\072\152\216\024\146\014 \055\123\164\127\145\036\325\262\335\043\201\073\245\146\043\047  $\\ 147\\011\\217\\341\\167\\252\\103\\315\\145\\121\\010\\355\\121\\130\\376\\346$ \071\371\313\107\204\244\025\361\166\273\244\356\244\073\304\137 \357\262\063\226\021\030\267\311\145\276\030\341\243\244\334\372 \030\371\323\274\023\233\071\172\064\272\323\101\373\372\062\212 \052\267\053\206\013\151\203\070\276\315\212\056\013\160\255\215  $\\ \langle 046 \rangle 222 \rangle 356 \rangle 036 \rangle 365 \rangle 001 \rangle 053 \rangle 012 \rangle 331 \rangle 326 \rangle 227 \rangle 233 \rangle 156 \rangle 340 \rangle 250 \rangle 031$ \034\072\041\213\014\036\100\255\003\347\335\146\176\365\271\040 \015\003\350\226\371\202\105\324\071\340\240\000\135\327\230\346  $\label{eq:condition} $$ \frac{175}236\frac{147}{163}\frac{303}{232}\frac{367}{253}\frac{213}{241}\frac{072}{024}\frac{357}{064}\frac{274}{274} $$$ \122\016\211\230\232\004\100\204\035\176\105\151\223\127\316\353 \316\370\120\174\117\034\156\004\103\233\371\326\073\043\030\351 \352\216\321\115\106\215\361\073\344\152\312\272\373\043\267\233 \372\231\001\051\132\130\132\055\343\371\324\155\016\046\255\301 \156\064\274\062\370\014\005\372\145\243\333\073\067\203\042\351 \326\334\162\063\375\135\362\040\275\166\074\043\332\050\367\371  $\label{eq:condition} $$ \033\353\131\144\325\334\137\162\176\040\374\315\211\265\220\147 $$$  $\label{eq:condition} $$ \frac{115}{142}\frac{077}{116}\frac{255}{035}\frac{303}{071}\frac{376}{172}\frac{364}{050}\frac{026}{337}\frac{101}{101} $$$ \366\110\200\005\327\017\121\171\254\020\253\324\354\003\146\346 \152\260\272\061\222\102\100\152\276\072\323\162\341\152\067\125 \274\254\035\225\267\151\141\362\103\221\164\346\240\323\012\044  $\label{eq:condition} $$ 106\241\010\257\326\332\105\031\226\324\123\035\133\204\171\360 $$$ \300\367\107\357\213\217\305\006\256\235\114\142\235\377\106\004 \370\323\311\266\020\045\100\165\376\026\252\311\112\140\206\057 \272\357\060\167\344\124\342\270\204\231\130\200\252\023\213\121 \072\117\110\366\213\266\263

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "AC RAIZ FNMT-RCM"
# Issuer: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
# Serial Number:5d:93:8d:30:67:36:c8:06:1d:1a:c7:54:84:69:07
# Subject: OU=AC RAIZ FNMT-RCM,O=FNMT-RCM,C=ES
# Not Valid Before: Wed Oct 29 15:59:56 2008
# Not Valid After: Tue Jan 01 00:00:00 2030
# Fingerprint (SHA-256):
EB:C5:57:0C:29:01:8C:4D:67:B1:AA:12:7B:AF:12:F7:03:B4:61:1E:BC:17:B7:DA:B5:57:38:94:17:9B:93:FA
# Fingerprint (SHA1): EC:50:35:07:B2:15:C4:95:62:19:E2:A8:9A:5B:42:99:2C:4C:2C:20
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "AC RAIZ FNMT-RCM"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\354\120\065\007\262\025\304\225\142\031\342\250\232\133\102\231
\054\114\054\040
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\342\011\004\264\323\275\321\240\024\375\032\322\107\304\127\035
END
CKA ISSUER MULTILINE OCTAL
\060\073\061\013\060\011\006\003\125\004\006\023\002\105\123\061
\103\115\061\031\060\027\006\003\125\004\013\014\020\101\103\040
\122\101\111\132\040\106\116\115\124\055\122\103\115
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\017\135\223\215\060\147\066\310\006\035\032\307\124\204\151
\007
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Amazon Root CA 1"
# Issuer: CN=Amazon Root CA 1,O=Amazon,C=US
# Serial Number:06:6c:9f:cf:99:bf:8c:0a:39:e2:f0:78:8a:43:e6:96:36:5b:ca
```

# Subject: CN=Amazon Root CA 1,O=Amazon,C=US
# Not Valid Before: Tue May 26 00:00:00 2015
# Not Valid After: Sun Jan 17 00:00:00 2038

# Fingerprint (SHA-256):

8E:CD:E6:88:4F:3D:87:B1:12:5B:A3:1A:C3:FC:B1:3D:70:16:DE:7F:57:CC:90:4F:E1:CB:97:C6:AE:98:19:6E

# Fingerprint (SHA1): 8D:A7:F9:65:EC:5E:FC:37:91:0F:1C:6E:59:FD:C1:CC:6A:6E:DE:16

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Amazon Root CA 1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\023\006\154\237\317\231\277\214\012\071\342\360\170\212\103\346\226\066\133\312$ 

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.000\0.0$ \154\237\317\231\277\214\012\071\342\360\170\212\103\346\226\066 \133\312\060\015\006\011\052\206\110\206\367\015\001\001\013\005  $\label{eq:condition} $$ \000\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123$ \061\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157 \156\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172 \157\156\040\122\157\157\164\040\103\101\040\061\060\036\027\015 \061\065\060\065\062\066\060\060\060\060\060\060\060\132\027\015\063 \070\060\061\061\067\060\060\060\060\060\060\132\060\071\061\013 \060\011\006\003\125\004\006\023\002\125\123\061\017\060\015\006 \003\125\004\012\023\006\101\155\141\172\157\156\061\031\060\027  $\\ \\006\\ \\003\\ \\125\\ \\004\\ \\003\\ \\023\\ \\020\\ \\101\\ \\155\\ \\141\\ \\172\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\040\\ \\122\\ \\157\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\156\\ \\1$  $\label{eq:condition} $$ \frac{157}{164}040\\103\\101\\040\\061\\060\\202\\001\\042\\060\\015\\006\\011\\052$ \206\110\206\367\015\001\001\001\005\000\003\202\001\017\000\060 \202\001\012\002\202\001\001\000\262\170\200\161\312\170\325\343 \161\257\107\200\120\164\175\156\330\327\210\166\364\231\150\367 \130\041\140\371\164\204\001\057\254\002\055\206\323\240\103\172 \116\262\244\320\066\272\001\276\215\333\110\310\007\027\066\114 \364\356\210\043\307\076\353\067\365\265\031\370\111\150\260\336 \327\271\166\070\035\141\236\244\376\202\066\245\345\112\126\344 \105\341\371\375\264\026\372\164\332\234\233\065\071\057\372\260

\040\120\006\154\172\320\200\262\246\371\257\354\107\031\217\120 \070\007\334\242\207\071\130\370\272\325\251\371\110\147\060\226 \356\224\170\136\157\211\243\121\300\060\206\146\241\105\146\272 \124\353\243\303\221\371\110\334\377\321\350\060\055\175\055\164 \160\065\327\210\044\367\236\304\131\156\273\163\207\027\362\062  $\label{eq:condition} $$ 106\050\270\103\372\267\035\252\312\264\362\237\044\016\055\113 $$$ \367\161\134\136\151\377\352\225\002\313\070\212\256\120\070\157  $\label{eq:condition} $$ 33\sqrt{373} 055\sqrt{142} 033\sqrt{305} 307\sqrt{36} 124\sqrt{341} 167\sqrt{340} 147\sqrt{310} 017\sqrt{234}$  $\label{eq:condition} $$ \207\043\326\077\100\040\177\040\200\304\200\114\076\073\044\046 $$$ \216\004\256\154\232\310\252\015\002\003\001\000\001\243\102\060 \100\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  $\label{eq:condition} $$ \001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002$ \001\206\060\035\006\003\125\035\016\004\026\004\024\204\030\314  $\label{eq:condition} $$ \205\064\354\274\014\224\224\056\010\131\234\307\262\020\116\012 $$$  $\label{eq:condition} $$ \0.010\0.060\0.015\0.006\0.011\0.052\2.06\1.10\2.06\3.67\0.015\0.01\0.01\0.013\0.05\0.000$ \003\202\001\001\000\230\362\067\132\101\220\241\032\305\166\121  $\label{eq:condition} $$ \0.050\0.40\0.66\0.43\0.16\2.56\3.46\0.50\2.73\2.52\3.70\2.24\2.56\1.10\2.44\0.60$ \177\033\374\044\215\113\264\310\241\227\366\266\361\172\160\310 \123\223\314\010\050\343\230\045\317\043\244\371\336\041\323\174  $\label{eq:condition} $$\205\011\255\116\232\165\072\302\013\152\211\170\166\104\107\030$$ \145\154\215\101\216\073\177\232\313\364\265\247\120\327\005\054 \067\350\003\113\255\351\141\240\002\156\365\362\360\305\262\355 \133\267\334\372\224\134\167\236\023\245\177\122\255\225\362\370 \223\073\336\213\134\133\312\132\122\133\140\257\024\367\113\357 \243\373\237\100\225\155\061\124\374\102\323\307\106\037\043\255 \331\017\110\160\232\331\165\170\161\321\162\103\064\165\156\127 \131\302\002\134\046\140\051\317\043\031\026\216\210\103\245\324  $\label{eq:condition} $\344\313\010\373\043\021\103\350\103\051\162\142\241\251\135\136$ \010\324\220\256\270\330\316\024\302\320\125\362\206\366\304\223 \103\167\146\141\300\271\350\101\327\227\170\140\003\156\112\162  $\verb|256|245|321|175|272|020|236|206|154|033|212|271|131|063|370|353|$ \304\220\276\361\271

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "Amazon Root CA 1"
```

8E:CD:E6:88:4F:3D:87:B1:12:5B:A3:1A:C3:FC:B1:3D:70:16:DE:7F:57:CC:90:4F:E1:CB:97:C6:AE:98:19:6E

# Fingerprint (SHA1): 8D:A7:F9:65:EC:5E:FC:37:91:0F:1C:6E:59:FD:C1:CC:6A:6E:DE:16

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

<sup>#</sup> Issuer: CN=Amazon Root CA 1,O=Amazon,C=US

<sup>#</sup> Serial Number:06:6c:9f:cf:99:bf:8c:0a:39:e2:f0:78:8a:43:e6:96:36:5b:ca

<sup>#</sup> Subject: CN=Amazon Root CA 1,O=Amazon,C=US

<sup>#</sup> Not Valid Before: Tue May 26 00:00:00 2015

<sup>#</sup> Not Valid After: Sun Jan 17 00:00:00 2038

<sup>#</sup> Fingerprint (SHA-256):

```
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Amazon Root CA 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\label{eq:continuous} $$ \frac{215}247\sqrt{371}145\sqrt{354}136\sqrt{374}067\sqrt{221}017\sqrt{034}156\sqrt{131}\sqrt{375}\sqrt{301}\sqrt{314} 
\152\156\336\026
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\103\306\277\256\354\376\255\057\030\306\210\150\060\374\310\346
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\label{eq:condition} $$ \061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157 $$
\156\040\122\157\157\164\040\103\101\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\317\231\277\214\012\071\342\360\170\212\103
\346\226\066\133\312
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Amazon Root CA 2"
# Issuer: CN=Amazon Root CA 2,O=Amazon,C=US
# Serial Number:06:6c:9f:d2:96:35:86:9f:0a:0f:e5:86:78:f8:5b:26:bb:8a:37
# Subject: CN=Amazon Root CA 2,O=Amazon,C=US
# Not Valid Before: Tue May 26 00:00:00 2015
# Not Valid After: Sat May 26 00:00:00 2040
# Fingerprint (SHA-256):
1B:A5:B2:AA:8C:65:40:1A:82:96:01:18:F8:0B:EC:4F:62:30:4D:83:CE:C4:71:3A:19:C3:9C:01:1E:A4:6D:B4
# Fingerprint (SHA1): 5A:8C:EF:45:D7:A6:98:59:76:7A:8C:8B:44:96:B5:78:CF:47:4B:1A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\062
END
```

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

#### CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

**END** 

## CKA SERIAL NUMBER MULTILINE OCTAL

\002\023\006\154\237\322\226\065\206\237\012\017\345\206\170\370 \133\046\273\212\067

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\101\060\202\003\051\240\003\002\001\002\002\003\006 \154\237\322\226\065\206\237\012\017\345\206\170\370\133\046\273 \212\067\060\015\006\011\052\206\110\206\367\015\001\001\014\005 \000\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123  $\label{eq:condition} $$ \0061\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157$ \156\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172 \157\156\040\122\157\157\164\040\103\101\040\062\060\036\027\015 \060\060\065\062\066\060\060\060\060\060\060\060\132\060\071\061\013 \060\011\006\003\125\004\006\023\002\125\123\061\017\060\015\006  $\\ \\003\\125\\004\\012\\023\\006\\101\\155\\141\\172\\157\\156\\061\\031\\060\\027$ \006\003\125\004\003\023\020\101\155\141\172\157\156\040\122\157 \157\164\040\103\101\040\062\060\202\002\042\060\015\006\011\052 \206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060 \202\002\012\002\202\002\001\000\255\226\237\055\234\112\114\112 \201\171\121\231\354\212\313\153\140\121\023\274\115\155\006\374 \260\010\215\335\031\020\152\307\046\014\065\330\300\157\040\204 \351\224\261\233\205\003\303\133\333\112\350\310\370\220\166\331 \133\117\343\114\350\006\066\115\314\232\254\075\014\220\053\222 \324\006\031\140\254\067\104\171\205\201\202\255\132\067\340\015 \314\235\246\114\122\166\352\103\235\267\004\321\120\366\125\340 \325\322\246\111\205\351\067\351\312\176\256\134\225\115\110\232 \077\256\040\132\155\210\225\331\064\270\122\032\103\220\260\277 \154\005\271\266\170\267\352\320\344\072\074\022\123\142\377\112 \362\173\276\065\005\251\022\064\343\363\144\164\142\054\075\000 \111\132\050\376\062\104\273\207\335\145\047\002\161\073\332\112 \367\037\332\315\367\041\125\220\117\017\354\256\202\341\237\153 \331\105\323\273\360\137\207\355\074\054\071\206\332\077\336\354 \162\125\353\171\243\255\333\335\174\260\272\034\316\374\336\117  $\label{eq:condition} $$ \065\166\317\017\370\170\037\152\066\121\106\047\141\133\351\236$ \317\360\242\125\175\174\045\212\157\057\264\305\317\204\056\053 \375\015\121\020\154\373\137\033\274\033\176\305\256\073\230\001 \061\222\377\013\127\364\232\262\271\127\351\253\357\015\166\321 \360\356\364\316\206\247\340\156\351\264\151\241\337\151\366\063 \306\151\056\227\023\236\245\207\260\127\020\201\067\311\123\263 \273\177\366\222\321\234\320\030\364\222\156\332\203\117\246\143

\231\114\245\373\136\357\041\144\172\040\137\154\144\205\025\313 \067\351\142\014\013\052\026\334\001\056\062\332\076\113\365\236 \072\366\027\100\224\357\236\221\010\206\372\276\143\250\132\063 \354\313\164\103\225\371\154\151\122\066\307\051\157\374\125\003 \134\037\373\237\275\107\353\347\111\107\225\013\116\211\042\011  $\label{eq:condition} $$ \frac{360}{361}277 056 212 162 156 200 131 377 127 072$ \371\165\062\243\116\137\354\355\050\142\331\115\163\362\314\201 \027\140\355\315\353\334\333\247\312\305\176\002\275\362\124\010  $\label{eq:condition} $$ \frac{375}264 \cdot 055 \cdot 011 \cdot 054 \cdot 027 \cdot 124 \cdot 112 \cdot 230 \cdot 321 \cdot 124 \cdot 341 \cdot 121 \cdot 147 \cdot 010 $$ \322\355\156\176\157\077\322\055\201\131\051\146\313\220\071\225  $\label{eq:condition} $$ \021\036\164\047\376\335\353\257\002\003\001\000\001\243\102\060 $$$ \100\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001 \001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002  $\label{eq:condition} $$ \001\206\060\035\006\003\125\035\016\004\026\004\024\260\014\360 $$$ \122\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000  $\label{eq:condition} $$ \003\202\002\001\000\252\250\200\217\016\170\243\340\242\324\315$$ \346\365\230\172\073\352\000\003\260\227\016\223\274\132\250\366 \054\214\162\207\251\261\374\177\163\375\143\161\170\245\207\131 \317\060\341\015\020\262\023\132\155\202\365\152\346\200\237\240 \005\013\150\344\107\153\307\152\337\266\375\167\062\162\345\030 \372\011\364\240\223\054\135\322\214\165\205\166\145\220\014\003  $\label{eq:condition} $$ \frac{171}267 \cdot 061 \cdot 043 \cdot 143 \cdot 255 \cdot 170 \cdot 203 \cdot 011 \cdot 206 \cdot 150 \cdot 204 \cdot 312 \cdot 377 \cdot 371 \cdot 317 \cdot 371 \cdot 317 \cdot 371 \cdot 371$ \046\232\222\171\347\315\113\305\347\141\247\027\313\363\251\022 \223\223\153\247\350\057\123\222\304\140\130\260\314\002\121\030 \133\205\215\142\131\143\266\255\264\336\232\373\046\367\000\047 \300\135\125\067\164\231\311\120\177\343\131\056\104\343\054\045 \356\354\114\062\167\264\237\032\351\113\135\040\305\332\375\034 \207\026\306\103\350\324\273\046\232\105\160\136\251\013\067\123 \342\106\173\047\375\340\106\362\211\267\314\102\266\313\050\046 \156\331\245\311\072\310\101\023\140\367\120\214\025\256\262\155 \032\025\032\127\170\346\222\052\331\145\220\202\077\154\002\257 \256\022\072\047\226\066\004\327\035\242\200\143\251\233\361\345 \272\264\174\024\260\116\311\261\037\164\137\070\366\121\352\233 \372\054\242\021\324\251\055\047\032\105\261\257\262\116\161\015 \300\130\106\326\151\006\313\123\313\263\376\153\101\315\101\176 \175\114\017\174\162\171\172\131\315\136\112\016\254\233\251\230 \163\171\174\264\364\314\271\270\007\014\262\164\134\270\307\157 \210\241\220\247\364\252\371\277\147\072\364\032\025\142\036\267 \237\276\075\261\051\257\147\241\022\362\130\020\031\123\003\060 \033\270\032\211\366\234\275\227\003\216\243\011\363\035\213\041 \361\264\337\344\034\321\237\145\002\006\352\134\326\023\263\204 \357\242\245\134\214\167\051\247\150\300\153\256\100\322\250\264 \352\315\360\215\113\070\234\031\232\033\050\124\270\211\220\357 \312\165\201\076\036\362\144\044\307\030\257\116\377\107\236\007 \366\065\145\244\323\012\126\377\365\027\144\154\357\250\042\045 \111\223\266\337\000\027\332\130\176\135\356\305\033\260\321\321  $\label{eq:condition} $$137\langle 041\langle 020\langle 307\langle 371\langle 363\langle 272\langle 002\langle 012\langle 047\langle 007\langle 305\langle 361\langle 326\langle 307\langle 323\langle 323\langle 323\rangle 323\rangle 323\rangle 323\rangle 323}$$ 

```
\340\373\011\140\154
END
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
# Trust for "Amazon Root CA 2"
# Issuer: CN=Amazon Root CA 2,O=Amazon,C=US
# Serial Number:06:6c:9f:d2:96:35:86:9f:0a:0f:e5:86:78:f8:5b:26:bb:8a:37
# Subject: CN=Amazon Root CA 2,O=Amazon,C=US
# Not Valid Before: Tue May 26 00:00:00 2015
# Not Valid After: Sat May 26 00:00:00 2040
# Fingerprint (SHA-256):
1B:A5:B2:AA:8C:65:40:1A:82:96:01:18:F8:0B:EC:4F:62:30:4D:83:CE:C4:71:3A:19:C3:9C:01:1E:A4:6D:B4
# Fingerprint (SHA1): 5A:8C:EF:45:D7:A6:98:59:76:7A:8C:8B:44:96:B5:78:CF:47:4B:1A
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Amazon Root CA 2"
CKA CERT SHA1 HASH MULTILINE OCTAL
\132\214\357\105\327\246\230\131\166\172\214\213\104\226\265\170
\317\107\113\032
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\310\345\215\316\250\102\342\172\300\052\134\174\236\046\277\146
END
CKA_ISSUER MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\label{eq:condition} $$ \001\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157 
\156\040\122\157\157\164\040\103\101\040\062
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\023\006\154\237\322\226\065\206\237\012\017\345\206\170\370
\133\046\273\212\067
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "Amazon Root CA 3"
```

# Issuer: CN=Amazon Root CA 3,O=Amazon,C=US

# Subject: CN=Amazon Root CA 3,O=Amazon,C=US

# Serial Number:06:6c:9f:d5:74:97:36:66:3f:3b:0b:9a:d9:e8:9e:76:03:f2:4a

# Not Valid Before: Tue May 26 00:00:00 2015

# Not Valid After: Sat May 26 00:00:00 2040

# Fingerprint (SHA-256):

18:CE:6C:FE:7B:F1:4E:60:B2:E3:47:B8:DF:E8:68:CB:31:D0:2E:BB:3A:DA:27:15:69:F5:03:43:B4:6D:B3:A4

# Fingerprint (SHA1): 0D:44:DD:8C:3C:8C:1A:1A:58:75:64:81:E9:0F:2E:2A:FF:B3:D2:6E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "Amazon Root CA 3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157 $$$ 

\156\040\122\157\157\164\040\103\101\040\063

**END** 

CKA ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\023\006\154\237\325\164\227\066\146\077\073\013\232\331\350 \236\166\003\362\112

**END** 

### CKA VALUE MULTILINE OCTAL

\060\202\001\266\060\202\001\133\240\003\002\001\002\002\002\006 \154\237\325\164\227\066\146\077\073\013\232\331\350\236\166\003 \362\112\060\012\006\010\052\206\110\316\075\004\003\002\060\071 \061\013\060\011\006\003\125\004\006\023\002\125\123\061\017\060 \015\006\003\125\004\012\023\006\101\155\141\172\157\156\061\031 \060\027\006\003\125\004\003\023\020\101\155\141\172\157\156\040 \122\157\157\164\040\103\101\040\063\060\036\027\015\061\065\060 \065\062\066\060\060\060\060\060\060\132\027\015\064\060\060\065 \062\066\060\060\060\060\060\060\060\132\060\071\061\013\060\011\006 \012\023\006\101\155\141\172\157\156\061\031\060\027\006\003\125 \004\003\023\020\101\155\141\172\157\156\040\122\157\157\164\040 \103\101\040\063\060\131\060\023\006\007\052\206\110\316\075\002 \001\006\010\052\206\110\316\075\003\001\007\003\102\000\004\051 \227\247\306\101\177\300\015\233\350\001\033\126\306\362\122\245 \272\055\262\022\350\322\056\327\372\311\305\330\252\155\037\163 \201\073\073\230\153\071\174\063\245\305\116\206\216\200\027\150 \142\105\127\175\104\130\035\263\067\345\147\010\353\146\336\243 \102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060

 $\label{eq:condition} $$\003\001\001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\035\006\003\125\035\016\004\026\004\024\253\266\333\327\006\236\067\254\060\206\007\221\160\307\234\304\031\261\170\300\060\12\006\010\052\206\110\316\075\004\003\002\003\111\000\060\106\002\041\000\340\205\222\243\027\267\215\371\053\006\245\223\254\032\230\150\141\162\372\341\241\320\373\034\170\140\246\103\231\305\270\304\002\041\000\234\002\357\361\224\234\263\226\371\353\306\052\370\266\054\376\072\220\024\026\327\214\143\044\110\034\337\060\175\325\150\073$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Amazon Root CA 3"
- # Issuer: CN=Amazon Root CA 3,O=Amazon,C=US
- # Serial Number:06:6c:9f:d5:74:97:36:66:3f:3b:0b:9a:d9:e8:9e:76:03:f2:4a
- # Subject: CN=Amazon Root CA 3,O=Amazon,C=US
- # Not Valid Before: Tue May 26 00:00:00 2015
- # Not Valid After: Sat May 26 00:00:00 2040
- # Fingerprint (SHA-256):

18:CE:6C:FE:7B:F1:4E:60:B2:E3:47:B8:DF:E8:68:CB:31:D0:2E:BB:3A:DA:27:15:69:F5:03:43:B4:6D:B3:A4

# Fingerprint (SHA1): 0D:44:DD:8C:3C:8C:1A:1A:58:75:64:81:E9:0F:2E:2A:FF:B3:D2:6E

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Amazon Root CA 3"

CKA CERT SHA1 HASH MULTILINE OCTAL

\015\104\335\214\074\214\032\032\130\165\144\201\351\017\056\052

\377\263\322\156

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\240\324\357\013\367\265\330\111\225\052\354\365\304\374\201\207

**END** 

CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$ 

\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156

 $\label{eq:condition} $$ \061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157 $$$ 

 $\label{eq:condition} $$ 156\040\122\157\157\164\040\103\101\040\063$$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\023\006\154\237\325\164\227\066\146\077\073\013\232\331\350$$ 

\236\166\003\362\112

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

```
#
# Certificate "Amazon Root CA 4"
# Issuer: CN=Amazon Root CA 4,O=Amazon,C=US
# Serial Number:06:6c:9f:d7:c1:bb:10:4c:29:43:e5:71:7b:7b:2c:c8:1a:c1:0e
# Subject: CN=Amazon Root CA 4,O=Amazon,C=US
# Not Valid Before: Tue May 26 00:00:00 2015
# Not Valid After: Sat May 26 00:00:00 2040
# Fingerprint (SHA-256):
E3:5D:28:41:9E:D0:20:25:CF:A6:90:38:CD:62:39:62:45:8D:A5:C6:95:FB:DE:A3:C2:2B:0B:FB:25:89:70:92
# Fingerprint (SHA1): F6:10:84:07:D6:F8:BB:67:98:0C:C2:E2:44:C2:EB:AE:1C:EF:63:BE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Amazon Root CA 4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\label{eq:condition} $$ \006\003\125\004\012\023\006\101\155\141\172\157\156$
\label{eq:condition} $$ \061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157 $$
\156\040\122\157\157\164\040\103\101\040\064
END
CKA ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\064
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\023\006\154\237\327\301\273\020\114\051\103\345\161\173\173
\054\310\032\301\016
END
CKA VALUE MULTILINE OCTAL
\060\202\001\362\060\202\001\170\240\003\002\001\002\002\003\006
\154\237\327\301\273\020\114\051\103\345\161\173\173\054\310\032
\301\016\060\012\006\010\052\206\110\316\075\004\003\003\060\071
\061\013\060\011\006\003\125\004\006\023\002\125\123\061\017\060
\060\027\006\003\125\004\003\023\020\101\155\141\172\157\156\040
```

 $\label{eq:control_loss} $$ 122\157\157\164\040\103\101\040\064\060\036\027\015\061\065\060\060\060\060\060\060\060\060\132\0027\015\064\060\060\060\060\060\060\060\071\061\013\060\011\006\003\125\004\000\125\123\061\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156\061\031\060\027\006\003\125$ 

\004\003\023\020\101\155\141\172\157\156\040\122\157\157\164\040 \103\101\040\064\060\166\060\020\006\007\052\206\110\316\075\002  $\label{eq:condition} $$ \001\006\005\053\201\004\000\042\003\142\000\004\322\253\212\067 $$$ \366\055\033\333\010\161\041\322\000\350\143\275\232\047\373\360 \071\156\135\352\075\245\311\201\252\243\133\040\230\105\135\026 \333\375\350\020\155\343\234\340\343\275\137\204\142\363\160\144  $\label{eq:condition} $$ \063\240\313\044\057\160\272\210\241\052\240\165\370\201\256\142 $$$ \006\304\201\333\071\156\051\260\036\372\056\134\243\102\060\100 \060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001 \377\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001  $\label{eq:condition} $$ \206\06\003\125\035\016\004\026\004\024\323\354\307\072 $$$ \145\156\314\341\332\166\232\126\373\234\363\206\155\127\345\201 \060\012\006\010\052\206\110\316\075\004\003\003\003\150\000\060 \145\002\060\072\213\041\361\275\176\021\255\320\357\130\226\057 \326\353\235\176\220\215\053\317\146\125\303\054\343\050\251\160  $\label{eq:condition} $$ \012\107\016\360\067\131\022\377\055\231\224\050\116\052\117\065 $$$ \115\063\132\002\061\000\352\165\000\116\073\304\072\224\022\221 \311\130\106\235\041\023\162\247\210\234\212\344\114\112\333\226 \324\254\213\153\153\111\022\123\063\255\327\344\276\044\374\265 \012\166\324\245\274\020

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "Amazon Root CA 4"
```

- # Issuer: CN=Amazon Root CA 4,O=Amazon,C=US
- # Serial Number:06:6c:9f:d7:c1:bb:10:4c:29:43:e5:71:7b:7b:2c:c8:1a:c1:0e
- # Subject: CN=Amazon Root CA 4,O=Amazon,C=US
- # Not Valid Before: Tue May 26 00:00:00 2015
- # Not Valid After: Sat May 26 00:00:00 2040
- # Fingerprint (SHA-256):

E3:5D:28:41:9E:D0:20:25:CF:A6:90:38:CD:62:39:62:45:8D:A5:C6:95:FB:DE:A3:C2:2B:0B:FB:25:89:70:92

# Fingerprint (SHA1): F6:10:84:07:D6:F8:BB:67:98:0C:C2:E2:44:C2:EB:AE:1C:EF:63:BE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Amazon Root CA 4"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \366\020\204\007\326\370\273\147\230\014\302\342\104\302\353\256\034\357\143\276$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \frac{211}{274}047\frac{325}{353}027\frac{215}{006}152\frac{151}{325}\frac{375}{211}107\frac{264}{315} $$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\071\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\017\060\015\006\003\125\004\012\023\006\101\155\141\172\157\156
\061\031\060\027\006\003\125\004\003\023\020\101\155\141\172\157
\156\040\122\157\157\164\040\103\101\040\064
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\023\006\154\237\327\301\273\020\114\051\103\345\161\173\173
\054\310\032\301\016
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
#
# Certificate "Symantec Class 1 Public Primary Certification Authority - G6"
# Issuer: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Serial Number:24:32:75:f2:1d:2f:d2:09:33:f7:b4:6a:ca:d0:f3:98
# Subject: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust
Network,O=Symantec Corporation,C=US
# Not Valid Before: Tue Oct 18 00:00:00 2011
# Not Valid After: Tue Dec 01 23:59:59 2037
# Fingerprint (SHA-256):
9D:19:0B:2E:31:45:66:68:5B:E8:A8:89:E2:7A:A8:C7:D7:AE:1D:8A:AD:DB:A3:C1:EC:F9:D2:48:63:CD:34:B9
# Fingerprint (SHA1): 51:7F:61:1E:29:91:6B:53:82:FB:72:E7:44:D9:8D:C3:CC:53:6D:64
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Symantec Class 1 Public Primary Certification Authority - G6"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154
\151\143\040\120\162\151\155\141\162\171\040\103\145\162\164\151
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
```

 $\label{eq:condition} $$ \061\035\060\033\060\03125\004\012\023\024\123\171\155\141\156\061\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\061\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107\066$ 

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\044\062\165\362\035\057\322\011\063\367\264\152\312\320 \363\230

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\366\060\202\002\336\240\003\002\001\002\002\020\044 \062\165\362\035\057\322\011\063\367\264\152\312\320\363\230\060 \015\006\011\052\206\110\206\367\015\001\001\001\013\005\000\060\201 \224\061\013\060\011\006\003\125\004\006\023\002\125\123\061\035 \143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060 \035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143  $\\ \\ \langle 040 \rangle 124 \rangle 162 \rangle 165 \rangle 163 \rangle 164 \rangle 040 \rangle 116 \rangle 145 \rangle 164 \rangle 167 \rangle 157 \rangle 162 \rangle 153 \rangle 061 \rangle 105$ \060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145 \143\040\103\154\141\163\163\040\061\040\120\165\142\154\151\143 \040\120\162\151\155\141\162\171\040\103\145\162\164\151\146\151 \143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  $\label{eq:condition} $$ \040\055\040\107\066\060\036\027\015\061\061\061\060\061\070\060 $$$ \060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063 \065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004  $\label{eq:condition} $$ \000\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024$ \123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141 \164\151\157\156\061\037\060\035\006\003\125\004\013\023\026\123 \171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145 \164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074 \123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\061 \040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040  $\label{eq:condition} $$ 164\150\157\162\151\164\171\040\055\040\107\066\060\202\001\042$ \060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003 \202\001\017\000\060\202\001\012\002\202\001\001\000\307\071\327 \111\144\251\231\202\042\114\352\105\331\007\026\343\173\364\203 \350\231\163\372\153\261\066\340\232\167\240\100\302\201\215\001 \307\314\214\275\217\175\367\171\343\172\114\003\115\331\373\375 \207\070\050\054\335\232\213\124\010\333\147\373\033\214\376\050 \222\057\276\267\262\110\247\201\241\330\136\210\303\314\071\100 \101\132\321\334\345\332\020\237\057\332\001\115\375\056\106\174 \371\056\047\012\151\067\356\221\243\033\152\314\104\277\033\307

\303\324\021\262\120\140\227\011\275\056\042\365\101\204\146\237 \315\100\246\251\000\200\301\037\225\222\237\336\363\110\357\333 \035\167\141\374\177\337\356\226\244\162\320\266\076\377\170\047 \257\313\222\025\151\010\333\143\020\342\346\227\254\156\334\254 \366\242\316\036\107\231\271\211\267\022\346\241\324\315\131\021 \147\303\157\205\330\102\116\050\276\131\125\131\004\225\253\217 \067\200\277\015\360\374\037\072\144\061\130\201\170\327\342\065  $\label{eq:condition} \begin{tabular}{ll} $\366\040\077\051\270\217\026\156\076\110\334\265\114\007\341\362 \end{tabular}$ \032\352\176\012\171\326\250\275\353\135\206\053\115\002\003\001 \000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377  $\label{eq:condition} $$ \004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377 $$$  $\\ \\004\\ \\005\\ \\006\\ \\003\\ \\001\\ \\001\\ \\377\\ \\060\\ \\035\\ \\006\\ \\003\\ \\125\\ \\035\\ \\016\\ \\004\\ \\026$ \004\024\063\101\350\310\071\022\025\223\110\362\226\062\056\132 \365\332\224\137\123\140\060\015\006\011\052\206\110\206\367\015  $\label{eq:condition} $$ \001\001\005\000\003\202\001\001\000\025\343\163\127\261\027\$ \266\137\111\151\104\246\366\136\172\147\254\322\336\165\111\253 \376\045\125\307\072\311\104\025\020\156\277\061\153\313\331\007 \223\177\034\205\143\000\343\062\022\340\314\313\373\071\154\217 \342\123\342\074\100\063\331\244\214\107\346\255\130\373\211\257  $\label{eq:condition} $\343\336\206\051\126\064\054\105\270\022\372\104\211\156\055\024$ \045\050\044\001\145\326\352\122\254\005\156\126\022\011\075\320 \164\364\327\275\006\312\250\072\215\126\102\372\215\162\076\164 \361\003\162\337\207\033\136\016\172\125\226\054\070\267\230\205 \315\115\063\104\311\224\217\132\061\060\067\113\243\072\022\263  $\label{eq:condition} $\347 \cdot 066 \cdot 321 \cdot 041 \cdot 150 \cdot 113 \cdot 055 \cdot 070 \cdot 346 \cdot 123 \cdot 256 \cdot 034 \cdot 045 \cdot 126 \cdot 010 \cdot$ \003\147\204\235\306\303\316\044\142\307\114\066\317\260\006\104 \267\365\137\002\335\331\124\351\057\220\116\172\310\116\203\100  $\label{eq:condition} $$ \014\232\227\074\067\277\277\354\366\360\264\205\167\050\301\013$ \310\147\202\020\027\070\242\267\006\352\233\277\072\370\351\043 \007\277\164\340\230\070\025\125\170\356\162\000\134\031\243\364  $\label{eq:condition} $$ 322\063\340\377\275\321\124\071\051\017 $$$ 

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
# For Email Distrust After: Wed Aug 31 00:00:00 2022
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER MULTILINE\_OCTAL
\\062\062\060\070\063\061\060\060\060\060\060\060\060\132
END

# Trust for "Symantec Class 1 Public Primary Certification Authority - G6"

# Issuer: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust Network,O=Symantec Corporation,C=US

# Serial Number:24:32:75:f2:1d:2f:d2:09:33:f7:b4:6a:ca:d0:f3:98

# Subject: CN=Symantec Class 1 Public Primary Certification Authority - G6,OU=Symantec Trust

Network,O=Symantec Corporation,C=US # Not Valid Before: Tue Oct 18 00:00:00 2011

# Not Valid After : Tue Dec 01 23:59:59 2037

# Fingerprint (SHA-256):

```
9D:19:0B:2E:31:45:66:68:5B:E8:A8:89:E2:7A:A8:C7:D7:AE:1D:8A:AD:DB:A3:C1:EC:F9:D2:48:63:CD:34:B9
# Fingerprint (SHA1): 51:7F:61:1E:29:91:6B:53:82:FB:72:E7:44:D9:8D:C3:CC:53:6D:64
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Symantec Class 1 Public Primary Certification Authority - G6"
CKA CERT SHA1 HASH MULTILINE OCTAL
\121\177\141\036\051\221\153\123\202\373\162\347\104\331\215\303
\314\123\155\144
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\057\250\264\332\366\144\113\036\202\371\106\075\124\032\174\260
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123
\164\145\143\040\103\157\162\160\157\162\141\164\151\157\156\061
\037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164
\061\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156
 \\ 164 \\ 145 \\ 143 \\ 040 \\ 103 \\ 154 \\ 141 \\ 163 \\ 163 \\ 040 \\ 061 \\ 040 \\ 120 \\ 165 \\ 142 \\ 154 \\
\label{eq:local_
\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151
\164\171\040\055\040\107\066
END
```

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\044\062\165\362\035\057\322\011\063\367\264\152\312\320 \363\230

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Symantec Class 2 Public Primary Certification Authority - G6"

#

# Issuer: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust

Network,O=Symantec Corporation,C=US

# Serial Number:64:82:9e:fc:37:1e:74:5d:fc:97:ff:97:c8:b1:ff:41

# Subject: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust

 $Network, O = Symantec\ Corporation, C = US$ 

# Not Valid Before: Tue Oct 18 00:00:00 2011

# Not Valid After: Tue Dec 01 23:59:59 2037

# Fingerprint (SHA-256):

CB:62:7D:18:B5:8A:D5:6D:DE:33:1A:30:45:6B:C6:5C:60:1A:4E:9B:18:DE:DC:EA:08:E7:DA:AA:07:81:5F:F0

# Fingerprint (SHA1): 40:B3:31:A0:E9:BF:E8:55:BC:39:93:CA:70:4F:4E:C2:51:D4:1D:8F

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Symantec Class 2 Public Primary Certification Authority - G6"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:control} $$ \000\201\224\061\013\060\011\006\003\125\004\006\023\022\125\123\061\035\060\033\006\003\125\0004\012\023\024\123\171\155\141\156\164\145\143\040\123\157\162\160\157\162\141\164\151\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107\066$ 

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:control} $$ \000\201\224\061\013\060\011\006\003\125\004\006\023\022\125\123\061\035\060\033\006\003\125\0004\012\023\024\123\171\155\141\156\164\145\143\040\123\157\162\160\157\162\141\164\151\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040\103\145\162\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107\066$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\144\202\236\374\067\036\164\135\374\227\377\227\310\261 \377\101

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\003\366\060\202\002\336\240\003\002\001\002\002\020\144 \\ \202\236\374\067\036\164\135\374\227\377\227\310\261\377\101\060 \\ \015\006\011\052\206\110\206\367\015\001\001\001\3005\000\060\201 \\ \224\061\013\060\011\006\003\125\004\0012\023\024\123\171\155\141\1156\164\145 \\ \143\040\103\157\162\160\157\162\141\164\151\157\156\061\037\060 \\ \035\006\003\125\004\013\023\026\123\171\155\141\156\164\145\143 \\ \040\124\162\165\163\164\040\116\145\164\167\157\162\153\061\105 \\ \060\103\006\003\125\004\003\023\074\123\171\155\141\156\164\145 \\ \143\040\103\154\141\163\163\040\062\040\120\165\142\151\143 \\ \040\120\162\151\155\141\162\171\040\103\145\162\151\164\151 \\ \143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171 \\ \040\120\157\162\151\164\171 \\ \040\120\157\162\151\164\171 \\ \143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171 \\ \143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171 \\ \143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171 \\ \143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171 \\ \143\141\164\151\157\162\151\164\171 \\ \143\141\164\151\157\162\151\164\171 \\ \143\141\164\151\157\164\101\165\164\150\157\162\151\164\171 \\ \143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171 \\ \143\141\164\151\157\164\151\164\151\164\171 \\ \143\141\164\151\157\164\151\164\151\156\164\151\151\164\171$ \\ \143\141\164\151\157\164\101\165\164\150\157\162\151\164\171\\ \143\141\164\151\157\164\151\156\144\151\156\144\151\156\164\150\157\164\171\\ \143\141\164\151\157\164\171\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\151\156\144\156\144\151\156\144\151\156\144\156\144\156\144\156\144\156\144\156\144\156\144\156\144\156\144\156\144\156\144\156\144\156\144\156\144\156\144\156\1

\040\055\040\107\066\060\036\027\015\061\061\061\060\061\070\060 \060\060\060\060\060\132\027\015\063\067\061\062\060\061\062\063 \065\071\065\071\132\060\201\224\061\013\060\011\006\003\125\004 \006\023\002\125\123\061\035\060\033\006\003\125\004\012\023\024 \123\171\155\141\156\164\145\143\040\103\157\162\160\157\162\141 \171\155\141\156\164\145\143\040\124\162\165\163\164\040\116\145 \164\167\157\162\153\061\105\060\103\006\003\125\004\003\023\074 \123\171\155\141\156\164\145\143\040\103\154\141\163\163\040\062 \040\120\165\142\154\151\143\040\120\162\151\155\141\162\171\040 \103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165  $\label{eq:condition} $$ 164\150\157\162\151\164\171\040\055\040\107\066\060\202\001\042$ \060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  $\label{eq:condition} $$ \202\001\017\000\060\202\001\012\002\202\001\001\000\315\314\351 $$$  $\label{eq:condition} $$ \005\310\143\205\313\077\100\143\027\275\030\372\065\346\004\147 $$$ \127\145\230\051\244\117\311\134\217\017\064\322\370\332\250\023  $\label{eq:condition} $$ \frac{142}252}270\\036\\120\\147\\170\\260\\026\\114\\240\\071\\251\\025\\172\\256$ \355\322\242\300\360\220\067\051\030\046\134\350\015\074\266\154 \111\077\301\340\334\331\113\266\024\031\013\246\323\226\341\326  $\label{eq:condition} $$ \031\046\034\371\037\145\113\371\032\103\034\000\203\326$ \320\252\111\242\324\333\346\142\070\272\120\024\103\155\371\061 \370\126\026\331\070\002\221\317\353\154\335\273\071\116\231\341  $\label{eq:condition} $$ \060\147\105\361\324\360\215\303\337\376\362\070\007\041\175\000 $$$ \136\126\104\263\344\140\275\221\053\234\253\133\004\162\017\262 \050\331\162\253\005\040\102\045\251\133\003\152\040\020\314\061 \360\053\332\065\054\320\373\232\227\116\360\202\113\053\330\137 \066\243\013\055\257\143\015\035\045\177\241\156\134\142\241\215  $\label{eq:condition} $$ \050\076\241\374\034\040\370\001\057\272\125\232\021\260\031\322$ \310\120\171\153\016\152\005\327\252\004\066\262\243\362\341\137 \167\247\167\234\345\036\334\351\337\152\301\145\135\002\003\001  $\label{eq:condition} $$ \000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377 $$$ \004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377 \004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026 \004\024\207\214\040\225\310\230\112\321\326\200\006\112\220\064 \104\337\034\115\277\260\060\015\006\011\052\206\110\206\367\015 \001\001\013\005\000\003\202\001\001\000\201\216\262\245\146\226 \267\041\245\266\357\157\043\132\137\333\201\305\102\245\170\301 \151\375\364\074\327\371\134\153\160\162\032\374\132\227\115\000 \200\210\210\202\212\303\161\015\216\305\211\233\054\355\215\013 \322\162\124\365\175\324\134\103\127\351\363\256\245\002\021\366 \166\053\201\127\335\175\332\164\060\375\124\107\366\340\026\156 \246\264\012\110\346\347\165\007\017\051\031\071\316\171\364\266 \154\305\137\231\325\037\113\372\337\155\054\074\015\124\200\160 \360\210\013\200\317\306\150\242\270\035\160\331\166\214\374\356 \245\311\317\255\035\317\231\045\127\132\142\105\313\026\153\275 \111\315\245\243\214\151\171\045\256\270\114\154\213\100\146\113 \026\077\317\002\032\335\341\154\153\007\141\152\166\025\051\231 \177\033\335\210\200\301\277\265\217\163\305\246\226\043\204\246  $\label{eq:condition} $$ \050\206\044\063\152\001\056\127\163\045\266\136\277\217\346\035\141\250\100\051\147\035\207\233\035\177\233\237\231\315\061\326\124\276\142\273\071\254\150\022\110\221\040\245\313\261\335\376\157\374\132\344\202\125\131\257\061\251$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# For Email Distrust After: Wed Aug 31 00:00:00 2022

CKA\_NSS\_EMAIL\_DISTRUST\_AFTER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \062\062\060\070\063\061\060\060\060\060\060\060\132$$ 

**END** 

# Trust for "Symantec Class 2 Public Primary Certification Authority - G6"

# Issuer: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust

Network,O=Symantec Corporation,C=US

# Serial Number:64:82:9e:fc:37:1e:74:5d:fc:97:ff:97:c8:b1:ff:41

# Subject: CN=Symantec Class 2 Public Primary Certification Authority - G6,OU=Symantec Trust

Network,O=Symantec Corporation,C=US

# Not Valid Before: Tue Oct 18 00:00:00 2011

# Not Valid After: Tue Dec 01 23:59:59 2037

# Fingerprint (SHA-256):

CB:62:7D:18:B5:8A:D5:6D:DE:33:1A:30:45:6B:C6:5C:60:1A:4E:9B:18:DE:DC:EA:08:E7:DA:AA:07:81:5F:F0

# Fingerprint (SHA1): 40:B3:31:A0:E9:BF:E8:55:BC:39:93:CA:70:4F:4E:C2:51:D4:1D:8F

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Symantec Class 2 Public Primary Certification Authority - G6"

CKA CERT SHA1 HASH MULTILINE OCTAL

\100\263\061\240\351\277\350\125\274\071\223\312\160\117\116\302

\121\324\035\217

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\175\013\203\345\373\174\255\007\117\040\251\265\337\143\355\171

**END** 

CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \060\201\224\061\013\060\011\006\003\125\004\006\023\002\125\123$$ 

\061\035\060\033\006\003\125\004\012\023\024\123\171\155\141\156

 $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ 

 $\label{eq:condition} $$ \037\060\035\006\003\125\004\013\023\026\123\171\155\141\156\164$$$ 

\145\143\040\124\162\165\163\164\040\116\145\164\167\157\162\153

 $\label{eq:condition} $$ \001\105\060\103\006\003\125\004\003\023\074\123\171\155\141\156$ 

\164\145\143\040\103\154\141\163\163\040\062\040\120\165\142\154

 $\label{eq:condition} $$ \frac{151}143\\040\\120\\162\\151\\155\\141\\162\\171\\040\\103\\145\\162\\164\\151$ 

 $\\ 146 \\ 151 \\ 143 \\ 141 \\ 164 \\ 151 \\ 157 \\ 156 \\ 040 \\ 101 \\ 165 \\ 164 \\ 150 \\ 157 \\ 162 \\ 151 \\$ 

\164\171\040\055\040\107\066

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\377\101
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
#
# Certificate "D-TRUST Root CA 3 2013"
# Issuer: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE
# Serial Number: 1039788 (0xfddac)
# Subject: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE
# Not Valid Before: Fri Sep 20 08:25:51 2013
# Not Valid After: Wed Sep 20 08:25:51 2028
# Fingerprint (SHA-256):
A1:A8:6D:04:12:1E:B8:7F:02:7C:66:F5:33:03:C2:8E:57:39:F9:43:FC:84:B3:8A:D6:AF:00:90:35:DD:94:57
# Fingerprint (SHA1): 6C:7C:CC:E7:D4:AE:51:5F:99:08:CD:3F:F6:E8:C3:78:DF:6F:EF:97
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "D-TRUST Root CA 3 2013"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA SUBJECT MULTILINE OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101
\040\063\040\062\060\061\063
END
CKA ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105\061
\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014
\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101
\040\063\040\062\060\061\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\003\017\335\254
END
CKA_VALUE MULTILINE_OCTAL
\060\202\004\016\060\202\002\366\240\003\002\001\002\002\003\017
\335\254\060\015\006\011\052\206\110\206\367\015\001\001\013\005
\000\060\105\061\013\060\011\006\003\125\004\006\023\002\104\105
```

\002\020\144\202\236\374\067\036\164\135\374\227\377\227\310\261

\061\025\060\023\006\003\125\004\012\014\014\104\055\124\162\165

\163\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003 \014\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103 \101\040\063\040\062\060\061\063\060\036\027\015\061\063\060\071 \062\060\060\070\062\065\065\061\132\027\015\062\070\060\071\062 \060\060\070\062\065\065\061\132\060\105\061\013\060\011\006\003 \125\004\006\023\002\104\105\061\025\060\023\006\003\125\004\012 \014\014\104\055\124\162\165\163\164\040\107\155\142\110\061\037 \060\035\006\003\125\004\003\014\026\104\055\124\122\125\123\124  $\label{eq:condition} $$ \040\122\157\157\164\040\103\101\040\063\040\062\060\061\063\060$$ \202\001\042\060\015\006\011\052\206\110\206\367\015\001\001\001 \005\000\003\202\001\017\000\060\202\001\012\002\202\001\001\000 \304\173\102\222\202\037\354\355\124\230\216\022\300\312\011\337 \223\156\072\223\134\033\344\020\167\236\116\151\210\154\366\341 \151\362\366\233\242\141\261\275\007\040\164\230\145\361\214\046 \010\315\250\065\312\200\066\321\143\155\350\104\172\202\303\154 \136\336\273\350\066\322\304\150\066\214\237\062\275\204\042\340 \334\302\356\020\106\071\155\257\223\071\256\207\346\303\274\011 \311\054\153\147\133\331\233\166\165\114\013\340\273\305\327\274 \076\171\362\137\276\321\220\127\371\256\366\146\137\061\277\323  $\label{eq:condition} $$ \frac{155}{217}\frac{247}{272}\frac{363}{043}\frac{145}{273}\frac{267}{357}\frac{243}{045}\frac{327}{012}\frac{352}{357} $$$ \130\266\357\210\372\372\171\262\122\130\325\360\254\214\241\121 \164\051\225\252\121\073\220\062\003\237\034\162\164\220\336\075 \226\206\004\254\057\343\244\201\167\267\132\026\377\330\017\077 \366\267\170\314\244\257\372\133\074\022\133\250\122\211\162\357 \210\363\325\104\201\206\225\043\237\173\335\274\331\064\357\174 \224\074\252\300\101\302\343\235\120\032\300\344\031\042\374\263 \002\003\001\000\001\243\202\001\005\060\202\001\001\006\017\006 \003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\035 \006\003\125\035\016\004\026\004\024\077\220\310\175\307\025\157  $\label{eq:condition} $$ 363 \cdot 044 \cdot 217 \cdot 251 \cdot 303 \cdot 057 \cdot 113 \cdot 242 \cdot 017 \cdot 041 \cdot 262 \cdot 057 \cdot 347 \cdot 060 \cdot 016 \cdot 006$ \003\125\035\017\001\001\377\004\004\003\002\001\006\060\201\276 \006\003\125\035\037\004\201\266\060\201\263\060\164\240\162\240 \160\206\156\154\144\141\160\072\057\057\144\151\162\145\143\164 \157\162\171\056\144\055\164\162\165\163\164\056\156\145\164\057 \103\116\075\104\055\124\122\125\123\124\045\062\060\122\157\157 \164\045\062\060\103\101\045\062\060\063\045\062\060\061  $\label{eq:condition} $$ \063\054\117\075\104\055\124\162\165\163\164\045\062\060\107\155$$ \141\164\145\162\145\166\157\143\141\164\151\157\156\154\151\163 \164\060\073\240\071\240\067\206\065\150\164\164\160\072\057\057 \143\162\154\056\144\055\164\162\165\163\164\056\156\145\164\057 \143\162\154\057\144\055\164\162\165\163\164\137\162\157\157\164 \137\143\141\137\063\137\062\060\061\063\056\143\162\154\060\015  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\013\005\000\003\202\001 $$$ \001\000\016\131\016\130\344\164\110\043\104\317\064\041\265\234 \024\032\255\232\113\267\263\210\155\134\251\027\160\360\052\237 \215\173\371\173\205\372\307\071\350\020\010\260\065\053\137\317

 $\label{eq:constraint} $$ \002\322\323\234\310\013\036\356\005\124\256\067\223\004\011\175\154\217\302\164\274\370\034\224\276\061\001\100\055\363\044\040\267\204\125\054\134\310\365\164\112\020\031\213\243\307\355\065\326\011\110\323\016\300\272\071\250\260\106\002\260\333\306\210\131\302\276\374\173\261\053\317\176\142\207\125\226\314\001\157\233\147\041\225\065\213\370\020\374\161\033\267\113\067\151\246\073\326\354\213\356\301\260\363\045\311\217\222\175\241\352\303\312\104\277\046\245\164\222\234\343\164\353\235\164\331\313\115\207\330\374\264\151\154\213\240\103\007\140\170\227\351\331\223\174\302\106\274\233\067\122\243\355\212\074\023\251\173\123\113\111\232\021\005\054\013\156\126\254\037\056\202\154\340\151\147\265\016\155\055\331\344\300\025\361\077\372\030\162\341\025\155\047\133\055\060\050\053\237\110\232\144\053\231\357\362\165\111\137\134$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "D-TRUST Root CA 3 2013"

# Issuer: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE

# Serial Number: 1039788 (0xfddac)

# Subject: CN=D-TRUST Root CA 3 2013,O=D-Trust GmbH,C=DE

# Not Valid Before: Fri Sep 20 08:25:51 2013 # Not Valid After : Wed Sep 20 08:25:51 2028

# Fingerprint (SHA-256):

A1:A8:6D:04:12:1E:B8:7F:02:7C:66:F5:33:03:C2:8E:57:39:F9:43:FC:84:B3:8A:D6:AF:00:90:35:DD:94:57

# Fingerprint (SHA1): 6C:7C:CC:E7:D4:AE:51:5F:99:08:CD:3F:F6:E8:C3:78:DF:6F:EF:97

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST Root CA 3 2013"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\154\174\314\347\324\256\121\137\231\010\315\077\366\350\303\170 \337\157\357\227

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \267\042\146\230\176\326\003\340\301\161\346\165\315\126\105\277 $$$ 

END

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00105\061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003\125\004\012\014\104\104\055\124\162\165\163\164\040\107\155\142\110\061\037\060\035\006\003\125\004\003\014\026\104\055\124\122\125\123\124\040\122\157\157\164\040\103\101\040\063\040\062\060\061\063$$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

```
\\002\\003\\017\\335\\254

END

CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR

CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST

CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
```

```
# # Certificate "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1" # # Issuer: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu
```

SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR # Serial Number: 1 (0x1)

# Subject: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR

# Not Valid Before: Mon Nov 25 08:25:55 2013

# Not Valid After: Sun Oct 25 08:25:55 2043

# Fingerprint (SHA-256):

46:ED:C3:68:90:46:D5:3A:45:3F:B3:10:4A:B8:0D:CA:EC:65:8B:26:60:EA:16:29:DD:7E:86:79:90:64:87:16

# Fingerprint (SHA1): 31:43:64:9B:EC:CE:27:EC:ED:3A:3F:0B:8F:0D:E4:E8:91:DD:EE:CA

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \000\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145\040\055\040\113\157\143\141\145\154\151\1061\102\060\100\006\003\125\004\012\151\154\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157\154\157\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165\162\165\155\165\040\123\141\163\171\157\156\040\113\141\155\165\040\113\141\155\165\040\113\141\155\165\040\113\141\155\165\040\113\141\113\040\113\141\155\165\040\113\157\153\040\113\141\155\165\040\113\157\153\040\113\141\155\165\040\113\157\153\040\113\141\163\151\040\1055\040\113\157\153\040\113\145\162\164\151\146\151\153\141\163\151\040\055\040\1123\165\162\164\151\146\151\153\141\163\151\040\055\040\1123\165\162\165\155\040\061$ 

**END** 

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\001\001

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\143\060\202\003\113\240\003\002\001\002\002\001\001  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\013\005\000\060$$$ \201\322\061\013\060\011\006\003\125\004\006\023\002\124\122\061 \030\060\026\006\003\125\004\007\023\017\107\145\142\172\145\040  $\begin{tabular}{ll} $$ \begin{tabular}{ll} $155\040\113\157\143\141\145\154\151\061\102\060\100\006\003\125 \end{tabular}$ \004\012\023\071\124\165\162\153\151\171\145\040\102\151\154\151 \155\163\145\154\040\166\145\040\124\145\153\156\157\154\157\152  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \165\155\165\040\055\040\124\125\102\111\124\101\113\061\055\060 \053\006\003\125\004\013\023\044\113\141\155\165\040\123\145\162 \164\151\146\151\153\141\163\171\157\156\040\115\145\162\153\145 \172\151\040\055\040\113\141\155\165\040\123\115\061\066\060\064  $\label{eq:condition} $$ \006\003\125\004\003\023\055\124\125\102\111\124\101\113\040\113$ \141\155\165\040\123\115\040\123\114\040\113\157\153\040\123 \145\162\164\151\146\151\153\141\163\151\040\055\040\123\165\162 \165\155\040\061\060\036\027\015\061\063\061\061\062\065\060\070 \062\065\065\065\132\027\015\064\063\061\060\062\065\060\070\062 \065\065\065\132\060\201\322\061\013\060\011\006\003\125\004\006 \023\002\124\122\061\030\060\026\006\003\125\004\007\023\017\107 \145\142\172\145\040\055\040\113\157\143\141\145\154\151\061\102 \060\100\006\003\125\004\012\023\071\124\165\162\153\151\171\145 \040\102\151\154\151\155\163\145\154\040\166\145\040\124\145\153  $\label{thm:local_local_state} $$ \frac{156\\157\\154\\157\\152\\151\\153\\040\\101\\162\\141\\163\\164\\151\\162\\155$$  $\\ 141 \\ 040 \\ 113 \\ 165 \\ 162 \\ 165 \\ 165 \\ 165 \\ 040 \\ 055 \\ 040 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 102 \\ 111 \\ 124 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 125 \\ 1$ \101\113\061\055\060\053\006\003\125\004\013\023\044\113\141\155 \165\040\123\145\162\164\151\146\151\153\141\163\171\157\156\040 \115\145\162\153\145\172\151\040\055\040\113\141\155\165\040\123 \115\061\066\060\064\006\003\125\004\003\023\055\124\125\102\111 \124\101\113\040\113\141\155\165\040\123\115\040\123\123\114\040 \113\157\153\040\123\145\162\164\151\146\151\153\141\163\151\040 \055\040\123\165\162\165\155\040\061\060\202\001\042\060\015\006 \011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017 \000\060\202\001\012\002\202\001\001\000\257\165\060\063\252\273

\153\323\231\054\022\067\204\331\215\173\227\200\323\156\347\377 \233\120\225\076\220\225\126\102\327\031\174\046\204\215\222\372  $\label{eq:condition} $$ \072\017\342\144\070\267\214\274\350\210\371\213\044\253 $$$  $\label{eq:condition} $$ \056\243\365\067\344\100\216\030\045\171\203\165\037\073\377\154$$$ \250\305\306\126\370\264\355\212\104\243\253\154\114\374\035\320 \334\357\150\275\317\344\252\316\360\125\367\242\064\324\203\153 \067\174\034\302\376\265\003\354\127\316\274\264\265\305\355\000  $\label{eq:condition} $$ \0.017\123\0.67\0.52\115\3.64\117\0.14\2.03\3.73\2.06\3.17\3.13\3.76\2.14\1.16$ \275\207\371\247\213\041\127\234\172\337\003\147\211\054\235\227 \141\247\020\270\125\220\177\016\055\047\070\164\337\347\375\332 \116\022\343\115\025\042\002\310\340\340\374\017\255\212\327\311  $\label{eq:condition} $$ 124\120\314\073\017\312\026\200\204\320\121\126\303\216\126\177$ \211\042\063\057\346\205\012\275\245\250\033\066\336\323\334\054 \155\073\307\023\275\131\043\054\346\345\244\367\330\013\355\352 \220\100\104\250\225\273\223\325\320\200\064\266\106\170\016\037 \000\223\106\341\356\351\371\354\117\027\002\003\001\000\001\243 \102\060\100\060\035\006\003\125\035\016\004\026\004\024\145\077 \307\212\206\306\074\335\074\124\134\065\370\072\355\122\014\107 \127\310\060\016\006\003\125\035\017\001\001\377\004\004\003\002  $\label{eq:condition} $$ \001\006\000\17\006\003\125\035\023\001\001\377\004\005\060\003\$ \001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\013  $\label{eq:condition} $$ \005\000\003\202\001\000\0052\077\341\361\062\216\256\341\230 $$$  $\label{eq:condition} $$ \frac{134\\113\\136\\317\\153\\036\\152\\011\\322\\042\\251\\022\\307\\136\\127\\175$ \163\126\144\200\204\172\223\344\011\271\020\315\237\052\047\341  $\label{eq:condition} $$ \000\167\276\110\310\065\250\201\237\344\270\054\311\177\016\260 $$$ \322\113\067\135\352\271\325\013\136\064\275\364\163\051\303\355 \046\025\234\176\010\123\212\130\215\320\113\050\337\301\263\337  $\\ \langle 040 \rangle 363 \rangle 371 \rangle 343 \rangle 343 \rangle 072 \rangle 337 \rangle 314 \rangle 234 \rangle 224 \rangle 330 \rangle 116 \rangle 117 \rangle 303 \rangle 153 \rangle 027 \rangle 324 \rangle 224 \rangle 324 \rangle 324 \rangle 224 \rangle 324 \rangle 224 \rangle$ \267\367\162\350\255\146\063\265\045\123\253\340\370\114\251\235 \375\362\015\272\256\271\331\252\306\153\371\223\273\256\253\270  $\label{eq:condition} $$ \227\074\003\032\272\103\306\226\271\105\162\070\263\247\241\226$ \075\221\173\176\300\041\123\114\207\355\362\013\124\225\121\223 \325\042\245\015\212\361\223\016\076\124\016\260\330\311\116\334 \362\061\062\126\352\144\371\352\265\235\026\146\102\162\363\177 \323\261\061\103\374\244\216\027\361\155\043\253\224\146\370\255 \373\017\010\156\046\055\177\027\007\011\262\214\373\120\300\237 \226\215\317\266\375\000\235\132\024\232\277\002\104\365\301\302 \237\042\136\242\017\241\343

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"

<sup>#</sup> Issuer: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR # Serial Number: 1 (0x1)

<sup>#</sup> Subject: CN=TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1,OU=Kamu Sertifikasyon Merkezi - Kamu

```
SM,O=Turkiye Bilimsel ve Teknolojik Arastirma Kurumu - TUBITAK,L=Gebze - Kocaeli,C=TR
# Not Valid Before: Mon Nov 25 08:25:55 2013
# Not Valid After: Sun Oct 25 08:25:55 2043
# Fingerprint (SHA-256):
46:ED:C3:68:90:46:D5:3A:45:3F:B3:10:4A:B8:0D:CA:EC:65:8B:26:60:EA:16:29:DD:7E:86:79:90:64:87:16
# Fingerprint (SHA1): 31:43:64:9B:EC:CE:27:EC:ED:3A:3F:0B:8F:0D:E4:E8:91:DD:EE:CA
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "TUBITAK Kamu SM SSL Kok Sertifikasi - Surum 1"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\061\103\144\233\354\316\047\354\355\072\077\013\217\015\344\350
\221\335\356\312
END
CKA CERT MD5 HASH MULTILINE OCTAL
\334\000\201\334\151\057\076\057\260\073\366\075\132\221\216\111
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\201\322\061\013\060\011\006\003\125\004\006\023\002\124\122
\061\030\060\026\006\003\125\004\007\023\017\107\145\142\172\145
\040\055\040\113\157\143\141\145\154\151\061\102\060\100\006\003
\151\155\163\145\154\040\166\145\040\124\145\153\156\157\154\157
\152\151\153\040\101\162\141\163\164\151\162\155\141\040\113\165
\162\165\155\165\040\055\040\124\125\102\111\124\101\113\061\055
\060\053\006\003\125\004\013\023\044\113\141\155\165\040\123\145
\145\172\151\040\055\040\113\141\155\165\040\123\115\061\066\060
\064\006\003\125\004\003\023\055\124\125\102\111\124\101\113\040
\123\145\162\164\151\146\151\153\141\163\151\040\055\040\123\165
\162\165\155\040\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\001\001
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "GDCA TrustAUTH R5 ROOT"
# Issuer: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY
CO.,LTD.",C=CN
# Serial Number:7d:09:97:fe:f0:47:ea:7a
```

# Subject: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY

CO..LTD.".C=CN

# Not Valid Before: Wed Nov 26 05:13:15 2014 # Not Valid After: Mon Dec 31 15:59:59 2040

# Fingerprint (SHA-256):

BF:FF:8F:D0:44:33:48:7D:6A:8A:A6:0C:1A:29:76:7A:9F:C2:BB:B0:5E:42:0F:71:3A:13:B9:92:89:1D:38:93

# Fingerprint (SHA1): 0F:36:38:5B:81:1A:25:C3:9B:31:4E:83:CA:E9:34:66:70:CC:74:B4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GDCA TrustAUTH R5 ROOT"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000142\001\006\003\125\004\006\023\002\103\116\061\062\060\060\006\003\125\004\012\014\051\107\125\101\116\107\040\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105\004\0103\117\056\054\114\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040\122\117\117\124$ 

**END** 

CKA\_ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000142\001\006\003\125\004\0006\023\002\103\116\006\006\0006\0003\125\0004\0012\014\005\1107\125\101\116\107\040\0104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105\004\0103\117\056\054\114\124\104\056\006\1037\006\0035\006\003\125\0004\003\014\026\107\104\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040\122\117\117\124$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\175\011\227\376\360\107\352\172

**END** 

#### CKA VALUE MULTILINE OCTAL

\004\012\014\051\107\125\101\116\107\040\104\117\116\107\040\103 \105\122\124\111\106\111\103\101\124\105\040\101\125\124\110\117 \122\111\124\131\040\103\117\056\054\114\124\104\056\061\037\060 \035\006\003\125\004\003\014\026\107\104\103\101\040\124\162\165 \163\164\101\125\124\110\040\122\065\040\122\117\117\124\060\202 \002\042\060\015\006\011\052\206\110\206\367\015\001\001\001\005  $\label{eq:condition} $$ \000\003\202\002\017\000\060\202\002\012\002\202\002\001\000\331 $$$ \243\026\360\310\164\164\167\233\357\063\015\073\006\176\125\374  $\label{eq:condition} $$ \265\140\217\166\206\022\102\175\126\146\076\210\202\355\162\143$$ \016\236\213\335\064\054\002\121\121\303\031\375\131\124\204\311 \361\153\263\114\260\351\350\106\135\070\306\242\247\056\021\127 \272\202\025\242\234\217\155\260\231\112\012\362\353\211\160\143 \116\171\304\267\133\275\242\135\261\362\101\002\053\255\251\072 \243\354\171\012\354\137\072\343\375\357\200\074\255\064\233\032  $\label{eq:condition} $$ \253\210\046\173\126\242\202\206\037\353\065\211\203\177\137\256$$ \051\116\075\266\156\354\256\301\360\047\233\256\343\364\354\357 \256\177\367\206\075\162\172\353\245\373\131\116\247\353\225\214 \042\071\171\341\055\010\217\314\274\221\270\101\367\024\301\043 \251\303\255\232\105\104\263\262\327\054\315\306\051\342\120\020 \256\134\313\202\216\027\030\066\175\227\346\210\232\260\115\064 \011\364\054\271\132\146\052\260\027\233\236\036\166\235\112\146 \061\101\337\077\373\305\006\357\033\266\176\032\106\066\367\144  $\\ 143 \\ 073 \\ 343 \\ 071 \\ 030 \\ 043 \\ 347 \\ 147 \\ 165 \\ 024 \\ 325 \\ 165 \\ 127 \\ 222 \\ 067 \\ 275$ \276\152\033\046\120\362\066\046\006\220\305\160\001\144\155\166 \146\341\221\333\156\007\300\141\200\056\262\056\057\214\160\247 \321\073\074\263\221\344\156\266\304\073\160\362\154\222\227\011 \315\107\175\030\300\363\273\236\017\326\213\256\007\266\132\017  $\label{eq:condition} $$ 316\013\014\107\247\345\076\270\275\175\307\233\065\240\141\227 $$$ \072\101\165\027\314\053\226\167\052\222\041\036\331\225\166\040 \147\150\317\015\275\337\326\037\011\152\232\342\314\163\161\244  $\begin{tabular}{l} $$ \057\175\022\200\267\123\060\106\136\113\124\231\017\147\311\245 \end{tabular}$ \310\362\040\301\202\354\235\021\337\302\002\373\032\073\321\355 \040\232\357\145\144\222\020\015\052\342\336\160\361\030\147\202 \214\141\336\270\274\321\057\234\373\017\320\053\355\033\166\271 \344\071\125\370\370\241\035\270\252\200\000\114\202\347\262\177 \011\270\274\060\240\057\015\365\122\236\216\367\222\263\012\000 \035\000\124\227\006\340\261\007\331\307\017\134\145\175\074\155 \131\127\344\355\245\215\351\100\123\237\025\113\240\161\366\032  $\label{eq:condition} $$ \041\343\332\160\006\041\130\024\207\205\167\171\252\202\171\002$ \026\004\024\342\311\100\237\115\316\350\232\241\174\317\016\077 \145\305\051\210\152\031\121\060\017\006\003\125\035\023\001\001 \377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001 \001\377\004\004\003\002\001\206\060\015\006\011\052\206\110\206  $\label{eq:condition} $$ 367 \times 0.05 \times 0.00 \times 0.03 \times 0.00 \times 0.00$ \247\314\150\130\272\001\017\053\031\315\215\260\141\105\254\021 \355\143\120\151\370\037\177\276\026\217\375\235\353\013\252\062 \107\166\322\147\044\355\275\174\063\062\227\052\307\005\206\146

\015\027\175\024\025\033\324\353\375\037\232\366\136\227\151\267 \032\045\244\012\263\221\077\137\066\254\213\354\127\250\076\347  $\label{eq:condition} $$ \201\212\030\127\071\205\164\032\102\307\351\133\023\137\217\371 $$$  $\label{eq:condition} $$ \010\351\222\164\215\365\107\322\253\073\326\373\170\146\116\066$$  $\label{eq:condition} $$ \frac{371}{351}\frac{322}{351}004\frac{336}{375}\frac{111}{143}\frac{374}{155}\frac{373}{024}\frac{161}{223}$ \147\057\107\112\267\271\377\036\052\163\160\106\060\277\132\362 \057\171\245\341\215\014\331\371\262\143\067\214\067\145\205\160 \152\134\133\011\162\271\255\143\074\261\335\370\374\062\277\067 \206\344\273\216\230\047\176\272\037\026\341\160\021\362\003\337 \045\142\062\047\046\030\062\204\237\377\000\072\023\272\232\115 \364\117\270\024\160\042\261\312\053\220\316\051\301\160\364\057 \235\177\362\220\036\326\132\337\267\106\374\346\206\372\313\340 \040\166\172\272\246\313\365\174\336\142\245\261\213\356\336\202 \146\212\116\072\060\037\077\200\313\255\047\272\014\136\327\320 \261\126\312\167\161\262\265\165\241\120\251\100\103\027\302\050 \331\317\122\213\133\310\143\324\102\076\240\063\172\106\056\367  $\label{eq:condition} $$ \012\040\106\124\176\152\117\061\361\201\176\102\164\070\145\163$ \047\356\306\174\270\216\327\245\072\327\230\241\234\214\020\125 \323\333\113\354\100\220\362\315\156\127\322\142\016\174\127\223 \261\247\155\315\235\203\273\052\347\345\266\073\161\130\255\375 \321\105\274\132\221\356\123\025\157\323\105\011\165\156\272\220 \135\036\004\317\067\337\036\250\146\261\214\346\040\152\357\374  $\label{eq:condition} $$ \frac{110}{164}230\frac{257}{051}157\frac{56}{152}307\frac{373}{175}321\frac{6}{061} $$$ \042\314\206\000\176\146\203\014\102\364\275\064\222\303\032\352  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \130\104\231\024\256\252\013\223\151\240\051\045\112\245\313\053 \335\212\146\007\026\170\025\127\161\033\354\365\107\204\363\236  $\label{eq:condition} $$ \061\067\172\325\177\044\255\344\274\375\375\314\156\203\350\014$$$ \250\267\101\154\007\335\275\074\206\227\057\322

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "GDCA TrustAUTH R5 ROOT"

# Issuer: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY CO.,LTD.",C=CN

# Serial Number:7d:09:97:fe:f0:47:ea:7a

# Subject: CN=GDCA TrustAUTH R5 ROOT,O="GUANG DONG CERTIFICATE AUTHORITY CO.,LTD.",C=CN

# Not Valid Before: Wed Nov 26 05:13:15 2014 # Not Valid After: Mon Dec 31 15:59:59 2040

# Fingerprint (SHA-256):

BF:FF:8F:D0:44:33:48:7D:6A:8A:A6:0C:1A:29:76:7A:9F:C2:BB:B0:5E:42:0F:71:3A:13:B9:92:89:1D:38:93

# Fingerprint (SHA1): 0F:36:38:5B:81:1A:25:C3:9B:31:4E:83:CA:E9:34:66:70:CC:74:B4

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA\_PRIVATE CK\_BBOOL CK\_FALSE

```
CKA LABEL UTF8 "GDCA TrustAUTH R5 ROOT"
CKA CERT SHA1 HASH MULTILINE OCTAL
\label{eq:condition} $$ \017\066\070\133\201\032\045\303\233\061\116\203\312\351\064\146 $$
\160\314\164\264
END
CKA CERT MD5 HASH MULTILINE OCTAL
\143\314\331\075\064\065\134\157\123\243\342\010\160\110\037\264
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\142\061\013\060\011\006\003\125\004\006\023\002\103\116\061 $$
\label{eq:condition} $$ \0.062\0.060\0.060\0.03\1.25\0.04\0.12\0.14\0.51\1.07\1.25\1.01\1.16\1.07\0.40 $$
\104\117\116\107\040\103\105\122\124\111\106\111\103\101\124\105
\label{eq:condition} $$ \040\101\125\124\110\117\122\111\124\131\040\103\117\056\054\114$$
\124\104\056\061\037\060\035\006\003\125\004\003\014\026\107\104
\103\101\040\124\162\165\163\164\101\125\124\110\040\122\065\040
\122\117\117\124
END
CKA SERIAL NUMBER MULTILINE OCTAL
\label{eq:condition} $$ \002\010\175\011\227\376\360\107\352\172$
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "TrustCor RootCert CA-1"
# Issuer: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de
R.L.,L=Panama City,ST=Panama,C=PA
# Serial Number:00:da:9b:ec:71:f3:03:b0:19
# Subject: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de
R.L.,L=Panama City,ST=Panama,C=PA
# Not Valid Before: Thu Feb 04 12:32:16 2016
# Not Valid After: Mon Dec 31 17:23:16 2029
# Fingerprint (SHA-256):
D4:0E:9C:86:CD:8F:E4:68:C1:77:69:59:F4:9E:A7:74:FA:54:86:84:B6:C4:06:F3:90:92:61:F4:DC:E2:57:5C
# Fingerprint (SHA1): FF:BD:CD:E7:82:C8:43:5E:3C:6F:26:86:5C:CA:A8:3A:45:5B:C3:0A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "TrustCor RootCert CA-1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
```

CKA MODIFIABLE CK BBOOL CK FALSE

 $\label{eq:control_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lambda_lam$ 

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\201\244\061\013\060\0011\006\003\125\004\000\120\141\156\141\155\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012\163\164\145\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060\045\006\003\125\004\013\141\162\165\163\164\103\157\162\040\123\157\162\164\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\061\037\060\003\125\004\003\125\004\003\125\164\103\157\162\151\164\171\061\037\060\0035\006\003\125\004\003\014\162\165\163\164\103\157\162\157\164\103\145\162\164\103\157\162\157\164\103\145\162\164\103\101\055\061$ 

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\011\000\332\233\354\161\363\003\260\031 $$$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\004\060\060\202\003\030\240\003\002\001\002\002\011\000 \332\233\354\161\363\003\260\031\060\015\006\011\052\206\110\206 \367\015\001\001\013\005\000\060\201\244\061\013\060\011\006\003 \125\004\006\023\002\120\101\061\017\060\015\006\003\125\004\010 \014\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004 \007\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044 \060\042\006\003\125\004\012\014\033\124\162\165\163\164\103\157 \162\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040 \122\056\114\056\061\047\060\045\006\003\125\004\013\014\036\124  $\label{eq:condition} $$ \006\003\125\004\003\014\026\124\162\165\163\164\103\157\162$ \040\122\157\157\164\103\145\162\164\040\103\101\055\061\060\036 \027\015\061\066\060\062\060\064\061\062\063\062\061\066\132\027 \015\062\071\061\062\063\061\061\067\062\063\061\066\132\060\201 \244\061\013\060\011\006\003\125\004\006\023\002\120\101\061\017  $\\ \\060\\015\\006\\003\\125\\004\\010\\014\\006\\120\\141\\156\\141\\155\\141\\061$ \024\060\022\006\003\125\004\007\014\013\120\141\156\141\155\141 \040\103\151\164\171\061\044\060\042\006\003\125\004\012\014\033 \124\162\165\163\164\103\157\162\040\123\171\163\164\145\155\163

\040\123\056\040\144\145\040\122\056\114\056\061\047\060\045\006 \003\125\004\013\014\036\124\162\165\163\164\103\157\162\040\103 \145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157 \162\151\164\171\061\037\060\035\006\003\125\004\003\014\026\124 \162\165\163\164\103\157\162\040\122\157\157\164\103\145\162\164  $\label{eq:condition} $$ \040\103\101\055\061\060\202\001\042\060\015\006\011\052\206\110 $$$ \206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001 \012\002\202\001\001\000\277\216\267\225\342\302\046\022\153\063  $\label{eq:condition} $$ \031\307\100\130\012\253\131\252\215\000\243\374\200\307\120\173$ \216\324\040\046\272\062\022\330\043\124\111\045\020\042\230\235 \106\322\301\311\236\116\033\056\054\016\070\363\032\045\150\034 \246\132\005\346\036\213\110\277\230\226\164\076\151\312\351\265 \170\245\006\274\325\000\136\011\012\362\047\172\122\374\055\325 \261\352\264\211\141\044\363\032\023\333\251\317\122\355\014\044 \272\271\236\354\176\000\164\372\223\255\154\051\222\256\121\264 \273\323\127\277\263\363\250\215\234\364\044\113\052\326\231\236  $\label{eq:condition} $$ 364\236\376\300\176\102\072\347\013\225\123\332\267\150\016\220 $$$ \114\373\160\077\217\112\054\224\363\046\335\143\151\251\224\330 \020\116\305\107\010\220\231\033\027\115\271\154\156\357\140\225  $\label{eq:condition} $$ \021\216\041\200\265\275\240\163\330\320\262\167\304\105\352\132$ \046\373\146\166\166\370\006\037\141\155\017\125\305\203\267\020 \126\162\006\007\245\363\261\032\003\005\144\016\235\132\212\326  $\label{eq:condition} $$ \206\160\033\044\336\376\050\212\053\320\152\260\374\172\242\334$$ \262\171\016\213\145\017\002\003\001\000\001\243\143\060\141\060 \035\006\003\125\035\016\004\026\004\024\356\153\111\074\172\077 \015\343\261\011\267\212\310\253\031\237\163\063\120\347\060\037 \006\003\125\035\043\004\030\060\026\200\024\356\153\111\074\172  $\label{eq:condition} $$ \077\015\343\261\011\267\212\310\253\031\237\163\063\120\347\060 $$$ \017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377 \060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206  $\label{eq:condition} $$ \0.060\0.15\0.06\0.11\0.05\2.06\1.10\2.06\3.67\0.15\0.01\0.01\0.01\0.01\0.005\0.000\0.003$ \202\001\001\000\045\030\324\221\217\023\356\217\036\035\021\123 \332\055\104\051\031\240\036\153\061\236\115\016\236\255\075\134 \101\157\225\053\044\241\171\230\072\070\066\373\273\146\236\110 \377\220\220\357\075\324\270\233\264\207\165\077\040\233\316\162 \317\241\125\301\115\144\242\031\006\241\007\063\014\013\051\345 \361\352\253\243\354\265\012\164\220\307\175\162\362\327\134\237 \221\357\221\213\267\334\355\146\242\317\216\146\073\274\237\072  $\label{eq:condition} $$ \024^340\047\335\026\230\300\225\324\012\244\344\201\232\165\224 $$$  $\label{eq:condition} $$ \065\234\220\137\210\067\006\255\131\225\012\260\321\147\323\031\$ \312\211\347\062\132\066\034\076\202\250\132\223\276\306\320\144 \221\266\317\331\266\030\317\333\176\322\145\243\246\304\216\027 \061\301\373\176\166\333\323\205\343\130\262\167\172\166\073\154 \057\120\034\347\333\366\147\171\037\365\202\225\232\007\247\024 \257\217\334\050\041\147\011\322\326\115\132\034\031\034\216\167 \134\303\224\044\075\062\153\113\176\324\170\224\203\276\067\115 \316\137\307\036\116\074\340\211\063\225\013\017\245\062\326\074 \132\171\054\031

```
END
```

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TrustCor RootCert CA-1"

# Issuer: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de

R.L.,L=Panama City,ST=Panama,C=PA

# Serial Number:00:da:9b:ec:71:f3:03:b0:19

# Subject: CN=TrustCor RootCert CA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de

R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:16 2016

# Not Valid After: Mon Dec 31 17:23:16 2029

# Fingerprint (SHA-256):

D4:0E:9C:86:CD:8F:E4:68:C1:77:69:59:F4:9E:A7:74:FA:54:86:84:B6:C4:06:F3:90:92:61:F4:DC:E2:57:5C

# Fingerprint (SHA1): FF:BD:CD:E7:82:C8:43:5E:3C:6F:26:86:5C:CA:A8:3A:45:5B:C3:0A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "TrustCor RootCert CA-1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 377\275\315\347\202\310\103\136\074\157\046\206\134\312\250\072$ 

\105\133\303\012

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\156\205\361\334\032\000\323\042\325\262\262\254\153\067\005\105

**END** 

CKA ISSUER MULTILINE OCTAL

\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101

 $\label{eq:condition} $$ \0061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155$ 

 $\label{eq:condition} $$ 141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141 $$$ 

 $\label{eq:condition} $$ \frac{155}141 040 103 151 164 171 061 044 060 042 006 003 125 004 012 }{155} $$$ 

 $\label{eq:condition} $$ \frac{155\163\040\122\056\114\056\061\047\060}{122\056\114\056\061\047\060} $$$ 

\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162

 $\label{eq:condition} $$ \frac{150}{157}\frac{62}{151}\frac{64}{171}\frac{061}{037}\frac{060}{035}\frac{006}{003}\frac{125}{004}\frac{003}{014} $$$ 

 $\label{eq:condition} $$ \026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145$$ 

 $\label{eq:condition} $$ 162\164\040\103\101\055\061$$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\011\000\332\233\354\161\363\003\260\031

**END** 

 ${\tt CKA\_TRUST\_SERVER\_AUTH\ CK\_TRUST\ CKT\_NSS\_TRUSTED\_DELEGATOR}$ 

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

```
#
# Certificate "TrustCor RootCert CA-2"
# Issuer: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de
R.L.,L=Panama City,ST=Panama,C=PA
# Serial Number:25:a1:df:ca:33:cb:59:02
# Subject: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de
R.L.,L=Panama City,ST=Panama,C=PA
# Not Valid Before: Thu Feb 04 12:32:23 2016
# Not Valid After: Sun Dec 31 17:26:39 2034
# Fingerprint (SHA-256):
07:53:E9:40:37:8C:1B:D5:E3:83:6E:39:5D:AE:A5:CB:83:9E:50:46:F1:BD:0E:AE:19:51:CF:10:FE:C7:C9:65
# Fingerprint (SHA1): B8:BE:6D:CB:56:F1:55:B9:63:D4:12:CA:4E:06:34:C7:94:B2:1C:C0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA LABEL UTF8 "TrustCor RootCert CA-2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA SUBJECT MULTILINE OCTAL
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\label{eq:condition} $$ \0061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155$
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\\ \langle 045 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 013 \rangle 014 \rangle 036 \rangle 124 \rangle 162 \rangle 165 \rangle 163 \rangle 164 \rangle 103 \rangle 157 \rangle 162 \rangle 163 \rangle 164 \rangle 163 \rangle 164 \rangle 165 \rangle 
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014
\label{eq:condition} $$ \026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145$$
\162\164\040\103\101\055\062
END
CKA ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\060\201\244\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
```

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\014 \026\124\162\165\163\164\103\157\162\040\122\157\157\164\103\145

\162\164\040\103\101\055\062

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\057\060\202\004\027\240\003\002\001\002\002\010\045 \241\337\312\063\313\131\002\060\015\006\011\052\206\110\206\367 \015\001\001\013\005\000\060\201\244\061\013\060\011\006\003\125 \004\006\023\002\120\101\061\017\060\015\006\003\125\004\010\014 \006\120\141\156\141\155\141\061\024\060\022\006\003\125\004\007 \014\013\120\141\156\141\155\141\040\103\151\164\171\061\044\060 \042\006\003\125\004\012\014\033\124\162\165\163\164\103\157\162 \040\123\171\163\164\145\155\163\040\123\056\040\144\145\040\122  $\label{eq:condition} $$ \056\114\056\061\047\060\045\006\003\125\004\013\014\036\124\162 $$$ \165\163\164\103\157\162\040\103\145\162\164\151\146\151\143\141  $\label{eq:condition} $$ 164\145\040\101\165\164\150\157\162\151\164\171\061\037\060\035$$  $\label{eq:condition} $$ \006\003\125\004\003\014\026\124\162\165\163\164\103\157\162\040 $$$ \122\157\157\164\103\145\162\164\040\103\101\055\062\060\036\027 \063\064\061\062\063\061\061\067\062\066\063\071\132\060\201\244 \061\013\060\011\006\003\125\004\006\023\002\120\101\061\017\060  $\label{eq:condition} $$ \006\003\125\004\010\014\006\120\141\156\141\155\141\061\024 $$$ \060\022\006\003\125\004\007\014\013\120\141\156\141\155\141\040 \103\151\164\171\061\044\060\042\006\003\125\004\012\014\033\124  $\label{eq:loss} $$ 162\165\163\164\103\157\162\040\123\171\163\164\145\155\163\040$$ \123\056\040\144\145\040\122\056\114\056\061\047\060\045\006\003 \125\004\013\014\036\124\162\165\163\164\103\157\162\040\103\145 \162\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162 \151\164\171\061\037\060\035\006\003\125\004\003\014\026\124\162 \103\101\055\062\060\202\002\042\060\015\006\011\052\206\110\206 \367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  $\label{eq:condition} $$ \002\202\001\000\247\040\156\302\052\242\142\044\225\220\166$$ \310\070\176\200\322\253\301\233\145\005\224\364\301\012\020\325 \002\254\355\237\223\307\207\310\260\047\053\102\014\075\012\076 \101\132\236\165\335\215\312\340\233\354\150\062\244\151\222\150 \214\013\201\016\126\240\076\032\335\054\045\024\202\057\227\323 \144\106\364\124\251\334\072\124\055\061\053\231\202\362\331\052 \327\357\161\000\270\061\244\276\172\044\007\303\102\040\362\212 \324\222\004\033\145\126\114\154\324\373\266\141\132\107\043\264  $\label{eq:condition} $$ \30\151\264\267\072\320\164\074\014\165\241\214\116\166\241\351 $$$ \333\052\245\073\372\316\260\377\176\152\050\375\047\034\310\261 \351\051\361\127\156\144\264\320\301\025\155\016\276\056\016\106 \310\136\364\121\376\357\016\143\072\073\161\272\317\157\131\312  $\label{eq:condition} $$ \014\343\233\135\111\270\114\342\127\261\230\212\102\127\234\166$$ \357\357\275\321\150\250\322\364\011\273\167\065\276\045\202\010 \304\026\054\104\040\126\251\104\021\167\357\135\264\035\252\136 \153\076\213\062\366\007\057\127\004\222\312\365\376\235\302\351 \350\263\216\114\113\002\061\331\344\074\110\202\047\367\030\202 \166\110\072\161\261\023\241\071\325\056\305\064\302\035\142\205

\337\003\376\115\364\257\075\337\134\133\215\372\160\341\245\176 \047\307\206\056\152\217\022\306\204\136\103\121\120\234\031\233 \170\346\374\366\355\107\176\173\075\146\357\023\023\210\137\074 \241\143\373\371\254\207\065\237\363\202\236\244\077\012\234\061 \151\213\231\244\210\112\216\156\146\115\357\026\304\017\171\050 \041\140\015\205\026\175\327\124\070\361\222\126\375\265\063\114 \203\334\327\020\237\113\375\306\370\102\275\272\174\163\002\340  $\label{eq:control_equation} $$ \frac{377}175\\315\\133\\341\\324\\254\\141\\173\\127\\325\\112\\173\\133\\324\\205$  $\label{eq:condition} $$130\047\135\277\370\053\140\254\240\046\256\024\041\047\306\167$ \232\063\200\074\136\106\077\367\303\261\243\206\063\306\350\136 \015\271\065\054\252\106\301\205\002\165\200\240\353\044\373\025  $\verb| 252| 344| 147| 177| 156| 167| 077| 364| 004| 212| 057| 174| 173| 343| 027| 141|$ \360\335\011\251\040\310\276\011\244\320\176\104\303\262\060\112  $\label{eq:condition} $$ \070\252\251\354\030\232\007\202\053\333\270\234\030\255\332\340 $$$ \106\027\254\317\135\002\003\001\000\001\243\143\060\141\060\035 \006\003\125\035\016\004\026\004\024\331\376\041\100\156\224\236 \274\233\075\234\175\230\040\031\345\214\060\142\262\060\037\006 \003\125\035\043\004\030\060\026\200\024\331\376\041\100\156\224 \236\274\233\075\234\175\230\040\031\345\214\060\142\262\060\017  $\\ \\006\\003\\125\\035\\023\\001\\001\\377\\004\\005\\060\\003\\001\\001\\377\\060$ \016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060 \015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202  $\label{eq:condition} $$ \002\001\000\236\105\236\014\073\266\357\341\072\310\174\321\000 $$$ \075\317\342\352\006\265\262\072\273\006\113\150\172\320\043\227 \164\247\054\360\010\330\171\132\327\132\204\212\330\022\232\033 \331\175\134\115\160\305\245\371\253\345\243\211\211\335\001\372 \354\335\371\351\222\227\333\260\106\102\363\323\142\252\225\376  $\label{eq:condition} $$ \061\147\024\151\130\220\012\252\013\356\067\043\307\120\121\264$$$ \365\176\236\343\173\367\344\314\102\062\055\111\014\313\377\111 \014\233\036\064\375\156\156\226\212\171\003\266\157\333\011\313 \375\137\145\024\067\341\070\365\363\141\026\130\344\265\155\015 \013\004\033\077\120\055\177\263\307\172\032\026\200\140\370\212 \037\351\033\052\306\371\272\001\032\151\277\322\130\307\124\127 \010\217\341\071\140\167\113\254\131\204\032\210\361\335\313\117 \170\327\347\341\063\055\374\356\101\372\040\260\276\313\367\070 \224\300\341\320\205\017\273\355\054\163\253\355\376\222\166\032 \144\177\133\015\063\011\007\063\173\006\077\021\244\134\160\074 \205\300\317\343\220\250\203\167\372\333\346\305\214\150\147\020  $\\ 147 \\ 245 \\ 122 \\ 055 \\ 360 \\ 304 \\ 231 \\ 217 \\ 177 \\ 277 \\ 321 \\ 153 \\ 342 \\ 265 \\ 107 \\ 326 \\$ \331\320\205\231\115\224\233\017\113\215\356\000\132\107\035\021 \003\254\101\030\257\207\267\157\014\072\217\312\317\334\003\301 \242\011\310\345\375\200\136\310\140\102\001\033\032\123\132\273  $\\ \\067\\246\\267\\274\\272\\204\\351\\036\\154\\032\\324\\144\\332\\324\\103\\376$ \223\213\113\362\054\171\026\020\324\223\013\210\217\241\330\206 \024\106\221\107\233\050\044\357\127\122\116\134\102\234\252\367 \111\354\047\350\100\036\263\246\211\042\162\234\365\015\063\264 \130\243\060\073\335\324\152\124\223\276\032\115\363\223\224\367 \374\204\013\077\204\040\134\064\003\104\305\332\255\274\012\301

 $\label{eq:condition} $$ \002\317\036\345\224\331\363\216\133\330\114\360\235\354\141\027\273\024\062\124\014\002\051\223\036\222\206\366\177\357\347\222\005\016\131\335\231\010\056\056\372\234\000\122\323\305\146\051\344\247\227\104\244\016\050\201\023\065\305\366\157\144\346\101\304\325\057\314\064\105\045\317\101\000\226\075\112\056\302\226\230\117\116\112\234\227\267\333\037\222\062\310\377\017\121\156\326\354\011$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TrustCor RootCert CA-2"

# Issuer: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de

R.L.,L=Panama City,ST=Panama,C=PA

# Serial Number:25:a1:df:ca:33:cb:59:02

# Subject: CN=TrustCor RootCert CA-2,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de

R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:23 2016

# Not Valid After: Sun Dec 31 17:26:39 2034

# Fingerprint (SHA-256):

07:53:E9:40:37:8C:1B:D5:E3:83:6E:39:5D:AE:A5:CB:83:9E:50:46:F1:BD:0E:AE:19:51:CF:10:FE:C7:C9:65

# Fingerprint (SHA1): B8:BE:6D:CB:56:F1:55:B9:63:D4:12:CA:4E:06:34:C7:94:B2:1C:C0

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "TrustCor RootCert CA-2"

CKA CERT SHA1 HASH MULTILINE OCTAL

\270\276\155\313\126\361\125\271\143\324\022\312\116\006\064\307

\224\262\034\300

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\242\341\370\030\013\272\105\325\307\101\052\273\067\122\105\144

**END** 

CKA ISSUER MULTILINE OCTAL

**END** 

\162\164\040\103\101\055\062

```
\label{eq:condition} $$ \002\010\045\241\337\312\063\313\131\002$
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
#
# Certificate "TrustCor ECA-1"
# Issuer: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama
City,ST=Panama,C=PA
# Serial Number:00:84:82:2c:5f:1c:62:d0:40
# Subject: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama
City,ST=Panama,C=PA
# Not Valid Before: Thu Feb 04 12:32:33 2016
# Not Valid After: Mon Dec 31 17:28:07 2029
# Fingerprint (SHA-256):
5A:88:5D:B1:9C:01:D9:12:C5:75:93:88:93:8C:AF:BB:DF:03:1A:B2:D4:8E:91:EE:15:58:9B:42:97:1D:03:9C
# Fingerprint (SHA1): 58:D1:DF:95:95:67:6B:63:C0:F0:5B:1C:17:4D:8B:84:0B:C8:78:BD
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "TrustCor ECA-1"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA_SUBJECT MULTILINE_OCTAL
\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\label{eq:condition} $$ 141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141 $$
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\\ \\045\\ \\006\\ \\003\\ \\125\\ \\004\\ \\013\\ \\014\\ \\036\\ \\124\\ \\162\\ \\165\\ \\163\\ \\164\\ \\103\\ \\157\\ \\162
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014
\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061
END
CKA ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\label{eq:condition} $$ \060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
```

\045\006\003\125\004\013\014\036\124\162\165\163\164\103\157\162

CKA SERIAL NUMBER MULTILINE OCTAL

\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164 \150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014 \016\124\162\165\163\164\103\157\162\040\105\103\101\055\061 END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL \002\011\000\204\202\054\137\034\142\320\100

**END** 

## CKA VALUE MULTILINE OCTAL

\060\202\004\040\060\202\003\010\240\003\002\001\002\002\011\000 \204\202\054\137\034\142\320\100\060\015\006\011\052\206\110\206 \367\015\001\001\013\005\000\060\201\234\061\013\060\011\006\003 \014\006\120\141\156\141\155\141\061\024\060\022\006\003\125\004 \007\014\013\120\141\156\141\155\141\040\103\151\164\171\061\044  $\label{eq:condition} $$ \004\003\125\004\012\014\033\124\162\165\163\164\103\157$$ \162\040\123\171\163\164\145\155\163\040\123\056\040\144\145\040  $\label{eq:condition} $$ \frac{122}056\\114\\056\\061\\047\\060\\045\\006\\003\\125\\004\\013\\014\\036\\124$ \162\165\163\164\103\157\162\040\103\145\162\164\151\146\151\143 \141\164\145\040\101\165\164\150\157\162\151\164\171\061\027\060  $\label{eq:condition} $$ \005\006\003\125\004\003\014\016\124\162\165\163\164\103\157\162$ \040\105\103\101\055\061\060\036\027\015\061\066\060\062\060\064 \061\062\063\062\063\063\132\027\015\062\071\061\062\063\061\061  $\label{eq:condition} $$ \067\062\070\060\067\132\060\201\234\061\013\060\011\006\003\125$$ \004\006\023\002\120\101\061\017\060\015\006\003\125\004\010\014 \006\120\141\156\141\155\141\061\024\060\022\006\003\125\004\007 \014\013\120\141\156\141\155\141\040\103\151\164\171\061\044\060 \042\006\003\125\004\012\014\033\124\162\165\163\164\103\157\162 \040\123\171\163\164\145\155\163\040\123\056\040\144\145\040\122 \056\114\056\061\047\060\045\006\003\125\004\013\014\036\124\162 \165\163\164\103\157\162\040\103\145\162\164\151\146\151\143\141 \006\003\125\004\003\014\016\124\162\165\163\164\103\157\162\040 \105\103\101\055\061\060\202\001\042\060\015\006\011\052\206\110 \206\367\015\001\001\001\005\000\003\202\001\017\000\060\202\001 \012\002\202\001\001\000\317\217\340\021\265\237\250\166\166\333 \337\017\124\357\163\143\051\202\255\107\306\243\153\355\376\137 \063\370\103\121\351\032\063\221\061\027\240\164\304\324\247\001 \346\262\222\076\152\235\355\016\371\164\230\100\323\077\003\200  $\label{eq:condition} $$ \006\202\100\350\261\342\247\121\247\035\203\046\153\253\336\372 $$$ \027\221\053\330\306\254\036\261\236\031\001\325\227\246\352\015 \267\304\125\037\047\174\322\010\325\166\037\051\025\207\100\071 \335\070\105\021\165\320\232\247\064\340\277\315\310\122\035\271 \107\176\015\270\273\306\014\366\163\127\026\132\176\103\221\037 \125\072\306\155\104\004\252\234\251\234\247\114\211\027\203\256 \243\004\136\122\200\213\036\022\045\021\031\327\014\175\175\061 \104\101\352\333\257\260\034\357\201\320\054\305\232\041\233\075 \355\102\073\120\046\362\354\316\161\141\006\142\041\124\116\177 \301\235\076\177\040\214\200\313\052\330\227\142\310\203\063\221

\175\260\242\132\017\127\350\073\314\362\045\262\324\174\057\354 \115\306\241\072\025\172\347\266\135\065\365\366\110\112\066\105 \146\324\272\230\130\301\002\003\001\000\001\243\143\060\141\060  $\label{eq:condition} $$ \035\006\003\125\035\016\004\026\004\024\104\236\110\365\314\155$$ \110\324\240\113\177\376\131\044\057\203\227\231\232\206\060\037 \006\003\125\035\043\004\030\060\026\200\024\104\236\110\365\314 \155\110\324\240\113\177\376\131\044\057\203\227\231\232\206\060  $\label{eq:condition} $$ \000\003\125\035\017\001\001\377\004\004\003\002\001\206$ \060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\003  $\label{eq:condition} $$ \202\001\000\005\076\065\134\025\160\233\311\307\163\141\157 $$$ \162\053\324\302\217\362\103\135\002\316\304\224\271\224\021\203 \147\135\342\147\154\165\166\277\273\014\252\066\306\255\107\223 \143\334\036\176\326\336\056\376\351\031\062\070\003\177\024\366  $\label{eq:condition} $$ \000\163\054\131\261\041\006\341\373\254\030\225\014\243\377\231 $$$ \226\367\053\047\233\325\044\314\035\335\301\072\340\230\104\260  $\label{eq:condition} $$ 304\344\076\167\261\163\251\144\054\366\034\001\174\077\135\105$$ \205\300\205\347\045\217\225\334\027\363\074\237\032\156\260\312 \343\035\052\351\114\143\372\044\141\142\326\332\176\266\034\154 \365\002\035\324\052\335\125\220\353\052\021\107\074\056\136\164 \262\202\042\245\175\123\037\105\354\047\221\175\347\042\026\350  $\label{eq:condition} $$ \300\150\066\330\306\361\117\200\104\062\371\341\321\321\035\252 $$$ \336\250\253\234\004\257\255\040\016\144\230\115\245\153\300\110 \130\226\151\115\334\007\214\121\223\242\337\237\017\075\213\140 \264\202\215\252\010\116\142\105\340\371\013\322\340\340\074\133 \336\134\161\047\045\302\346\003\201\213\020\123\343\307\125\242 \264\237\327\346

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "TrustCor ECA-1"

# Issuer: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

# Serial Number:00:84:82:2c:5f:1c:62:d0:40

# Subject: CN=TrustCor ECA-1,OU=TrustCor Certificate Authority,O=TrustCor Systems S. de R.L.,L=Panama City,ST=Panama,C=PA

# Not Valid Before: Thu Feb 04 12:32:33 2016 # Not Valid After : Mon Dec 31 17:28:07 2029

# Fingerprint (SHA-256):

5A:88:5D:B1:9C:01:D9:12:C5:75:93:88:93:8C:AF:BB:DF:03:1A:B2:D4:8E:91:EE:15:58:9B:42:97:1D:03:9C

# Fingerprint (SHA1): 58:D1:DF:95:95:67:6B:63:C0:F0:5B:1C:17:4D:8B:84:0B:C8:78:BD

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TrustCor ECA-1"

```
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\label{eq:condition} $$ 130\321\337\225\225\147\153\143\300\360\133\034\027\115\213\204
\013\310\170\275
END
CKA CERT MD5 HASH MULTILINE OCTAL
\047\222\043\035\012\365\100\174\351\346\153\235\330\365\347\154
END
CKA ISSUER MULTILINE OCTAL
\060\201\234\061\013\060\011\006\003\125\004\006\023\002\120\101
\061\017\060\015\006\003\125\004\010\014\006\120\141\156\141\155
\label{eq:condition} $$ 141\061\024\060\022\006\003\125\004\007\014\013\120\141\156\141 $$
\155\141\040\103\151\164\171\061\044\060\042\006\003\125\004\012
\014\033\124\162\165\163\164\103\157\162\040\123\171\163\164\145
\155\163\040\123\056\040\144\145\040\122\056\114\056\061\047\060
\040\103\145\162\164\151\146\151\143\141\164\145\040\101\165\164
\150\157\162\151\164\171\061\027\060\025\006\003\125\004\003\014
\016\124\162\165\163\164\103\157\162\040\105\103\101\055\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\label{eq:condition} $$ \002\011\000\204\202\054\137\034\142\320\100 $$
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "SSL.com Root Certification Authority RSA"
# Issuer: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:7b:2c:9b:d3:16:80:32:99
# Subject: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Fri Feb 12 17:39:39 2016
# Not Valid After: Tue Feb 12 17:39:39 2041
# Fingerprint (SHA-256):
85:66:6A:56:2E:E0:BE:5C:E9:25:C1:D8:89:0A:6F:76:A8:7E:C1:6D:4D:7D:5F:29:EA:74:19:CF:20:12:3B:69
# Fingerprint (SHA1): B7:AB:33:08:D1:EA:44:77:BA:14:80:12:5A:6F:BD:A9:36:49:0C:BB
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "SSL.com Root Certification Authority RSA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
```

 $\label{eq:continuous} $$ \frac{156\\061\\030\\060\\026\\006\\003\\125\\004\\0157\\162\\141\\164\\151\\157\\156\\061\\061\\060\\057\\006\\003\\125\\004\\003\\014\\050\\123\\123\\114\\056\\143\\157\\155\\040\\122\\157\\157\\164\\040\\103\\145\\162\\164\\151\\146\\151\\143\\141\\164\\151\\157\\156\\040\\101\\165\\164\\150\\157\\162\\151\\164\\171\\040\\122\\123\\101\\END$ 

CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000\174\061\013\060\011\006\003\125\004\0006\023\002\125\123\061\016\060\014\0006\003\125\004\0010\14\0007\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004\0012\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122\123\101\ END$ 

CKA SERIAL NUMBER MULTILINE OCTAL

\002\010\173\054\233\323\026\200\062\231

**END** 

### CKA VALUE MULTILINE OCTAL

\060\202\005\335\060\202\003\305\240\003\002\001\002\002\010\173  $\label{eq:condition} $$ \054\233\323\026\200\062\231\060\015\006\011\052\206\110\206\367 $$$ \015\001\001\013\005\000\060\174\061\013\060\011\006\003\125\004 \006\023\002\125\123\061\016\060\014\006\003\125\004\010\014\005 \124\145\170\141\163\061\020\060\016\006\003\125\004\007\014\007 \110\157\165\163\164\157\156\061\030\060\026\006\003\125\004\012  $\label{eq:condition} $$ \014\017\123\123\114\040\103\157\162\160\157\162\141\164\151\157$ \156\061\061\060\057\006\003\125\004\003\014\050\123\123\114\056 \143\157\155\040\122\157\157\164\040\103\145\162\164\151\146\151  $\\ 143 \\ 141 \\ 164 \\ 151 \\ 157 \\ 156 \\ 040 \\ 101 \\ 165 \\ 164 \\ 150 \\ 157 \\ 162 \\ 151 \\ 164 \\ 171 \\$ \040\122\123\101\060\036\027\015\061\066\060\062\061\062\061\067 \063\071\063\071\132\027\015\064\061\060\062\061\062\061\067\063 \071\063\071\132\060\174\061\013\060\011\006\003\125\004\006\023 \002\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145 \170\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157 \165\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$  $\label{eq:condition} $$ \004\003\125\004\003\014\050\123\123\114\056\143\157 $$$ \155\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141 \164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122 \123\101\060\202\002\042\060\015\006\011\052\206\110\206\367\015 \001\001\001\005\000\003\202\002\017\000\060\202\002\012\002\202 \002\001\000\371\017\335\243\053\175\313\320\052\376\354\147\205 \246\347\056\033\272\167\341\343\365\257\244\354\372\112\135\221 \304\127\107\153\030\167\153\166\362\375\223\344\075\017\302\026 \236\013\146\303\126\224\236\027\203\205\316\126\357\362\026\375 \000\142\365\042\011\124\350\145\027\116\101\271\340\117\106\227

\252\033\310\270\156\142\136\151\261\137\333\052\002\176\374\154 \312\363\101\330\355\320\350\374\077\141\110\355\260\003\024\035 \020\016\113\031\340\273\116\354\206\145\377\066\363\136\147\002 \013\235\206\125\141\375\172\070\355\376\342\031\000\267\157\241 \120\142\165\164\074\240\372\310\045\222\264\156\172\042\307\370 \036\241\343\262\335\221\061\253\053\035\004\377\245\112\004\067 \351\205\244\063\053\375\342\326\125\064\174\031\244\112\150\307 \262\250\323\267\312\241\223\210\353\301\227\274\214\371\035\331  $\\ \langle 042 \rangle 204 \rangle 044 \rangle 164 \rangle 307 \rangle 004 \rangle 075 \rangle 152 \rangle 251 \rangle 051 \rangle 223 \rangle 314 \rangle 353 \rangle 270 \rangle 133 \rangle 341 \rangle$ \376\137\045\252\064\130\310\301\043\124\235\033\230\021\303\070 \234\176\075\206\154\245\017\100\206\174\002\364\134\002\117\050 \313\256\161\237\017\072\310\063\376\021\045\065\352\374\272\305 \140\075\331\174\030\325\262\251\323\165\170\003\162\042\312\072 \303\037\357\054\345\056\251\372\236\054\266\121\106\375\257\003 \326\352\140\150\352\205\026\066\153\205\351\036\300\263\335\304 \044\334\200\052\201\101\155\224\076\310\340\311\201\101\000\236  $\label{eq:condition} $$ 136\277\177\305\010\230\242\030\054\102\100\263\371\157\070\047 $$ \113\116\200\364\075\201\107\340\210\174\352\034\316\265\165\134 \121\056\034\053\177\032\162\050\347\000\265\321\164\306\327\344 \237\255\007\223\266\123\065\065\374\067\344\303\366\135\026\276 \041\163\336\222\012\370\240\143\152\274\226\222\152\076\370\274 \145\125\233\336\365\015\211\046\004\374\045\032\246\045\151\313  $\label{eq:condition} $$ 302\155\312\174\342\131\137\227\254\353\357\056\310\274\327\033$ \131\074\053\314\362\031\310\223\153\047\143\031\317\374\351\046  $\label{eq:condition} $$ 370\312\161\233\177\223\376\064\147\204\116\231\353\374\263\170 $$$ \011\063\160\272\146\246\166\355\033\163\353\032\245\015\304\042 \023\040\224\126\012\116\054\154\116\261\375\317\234\011\272\242 \063\355\207\002\003\001\000\001\243\143\060\141\060\035\006\003 \125\035\016\004\026\004\024\335\004\011\007\242\365\172\175\122 \123\022\222\225\356\070\200\045\015\246\131\060\017\006\003\125  $\label{eq:condition} $$ \035\023\001\001\377\004\005\060\003\001\001\377\060\037\006\003$ \125\035\043\004\030\060\026\200\024\335\004\011\007\242\365\172 \175\122\123\022\222\225\356\070\200\045\015\246\131\060\016\006 \003\125\035\017\001\001\377\004\004\003\002\001\206\060\015\006 \011\052\206\110\206\367\015\001\001\013\005\000\003\202\002\001 \000\040\030\021\224\051\373\046\235\034\036\036\160\141\361\225 \162\223\161\044\255\150\223\130\216\062\257\033\263\160\003\374  $\label{eq:condition} $$ \045\053\164\205\220\075\170\152\364\271\213\245\227\073\265\030 $$$ \221\273\036\247\371\100\133\221\371\125\231\257\036\021\320\134  $\label{eq:condition} $$ \035\247\146\343\261\224\007\014\062\071\246\352\033\260\171\330 $$$ \035\234\160\104\343\212\335\304\371\225\037\212\070\103\077\001 \205\245\107\247\075\106\262\274\345\042\150\367\173\234\330\054  $\label{eq:condition} $$ \076\012\041\310\055\063\254\277\305\201\231\061\164\301\165\161 $$$ \305\276\261\360\043\105\364\235\153\374\031\143\235\243\274\004 \306\030\013\045\273\123\211\017\263\200\120\336\105\356\104\177 \253\224\170\144\230\323\366\050\335\207\330\160\145\164\373\016 \271\023\353\247\017\141\251\062\226\314\336\273\355\143\114\030 \273\251\100\367\240\124\156\040\210\161\165\030\352\172\264\064

\162\340\043\047\167\134\266\220\352\206\045\100\253\357\063\017 \313\237\202\276\242\040\373\366\265\055\032\346\302\205\261\164 \017\373\310\145\002\244\122\001\107\335\111\042\301\277\330\353 \153\254\176\336\354\143\063\025\267\043\010\217\306\017\215\101 \132\335\216\305\271\217\345\105\077\170\333\272\322\033\100\261 \376\161\115\077\340\201\242\272\136\264\354\025\340\223\335\010 \037\176\341\125\231\013\041\336\223\236\012\373\346\243\111\275  $\label{eq:condition} $$ \066\060\376\347\167\262\240\165\227\265\055\201\210\027\145\040$$$ \367\332\220\000\237\311\122\314\062\312\065\174\365\075\017\330 \053\327\365\046\154\311\006\064\226\026\352\160\131\032\062\171  $\label{eq:condition} $$ \frac{171}013\\266\\210\\177\\017\\122\\110\\075\\277\\154\\330\\242\\104\\056\\321$ \116\267\162\130\323\211\023\225\376\104\253\370\327\213\033\156 \234\274\054\240\133\325\152\000\257\137\067\341\325\372\020\013 \230\234\206\347\046\217\316\360\354\156\212\127\013\200\343\116 \262\300\240\143\141\220\272\125\150\067\164\152\266\222\333\237 \241\206\042\266\145\047\016\354\266\237\102\140\344\147\302\265 \332\101\013\304\323\213\141\033\274\372\037\221\053\327\104\007 \136\272\051\254\331\305\351\357\123\110\132\353\200\361\050\130 \041\315\260\006\125\373\047\077\123\220\160\251\004\036\127\047 \271

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "SSL.com Root Certification Authority RSA"
- # Issuer: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
- # Serial Number:7b:2c:9b:d3:16:80:32:99
- # Subject: CN=SSL.com Root Certification Authority RSA,O=SSL Corporation,L=Houston,ST=Texas,C=US
- # Not Valid Before: Fri Feb 12 17:39:39 2016
- # Not Valid After: Tue Feb 12 17:39:39 2041
- # Fingerprint (SHA-256):
- 85:66:6A:56:2E:E0:BE:5C:E9:25:C1:D8:89:0A:6F:76:A8:7E:C1:6D:4D:7D:5F:29:EA:74:19:CF:20:12:3B:69
- # Fingerprint (SHA1): B7:AB:33:08:D1:EA:44:77:BA:14:80:12:5A:6F:BD:A9:36:49:0C:BB
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "SSL.com Root Certification Authority RSA"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL
- \267\253\063\010\321\352\104\167\272\024\200\022\132\157\275\251
- $\ \ \, \backslash 066\backslash 111\backslash 014\backslash 273$

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \206\151\022\300\160\361\354\254\254\302\325\274\245\133\241\051$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061

```
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\122\123\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\173\054\233\323\026\200\062\231
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "SSL.com Root Certification Authority ECC"
# Issuer: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:75:e6:df:cb:c1:68:5b:a8
# Subject: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Fri Feb 12 18:14:03 2016
# Not Valid After: Tue Feb 12 18:14:03 2041
# Fingerprint (SHA-256):
34:17:BB:06:CC:60:07:DA:1B:96:1C:92:0B:8A:B4:CE:3F:AD:82:0E:4A:A3:0B:9A:CB:C4:A7:4E:BD:CE:BC:65
# Fingerprint (SHA1): C3:19:7C:39:24:E6:54:AF:1B:C4:AB:20:95:7A:E2:C3:0E:13:02:6A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "SSL.com Root Certification Authority ECC"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114\040
\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006
\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122\157
\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156
\040\101\165\164\150\157\162\151\164\171\040\105\103\103
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157
```

 $\label{eq:control_loss} $$ \frac{156\\061\\030\\060\\026\\006\\003\\125\\004\\0157\\162\\141\\164\\151\\157\\156\\061\\061\\060\\057\\006\\003\\125\\004\\003\\014\\050\\123\\123\\114\\056\\143\\157\\155\\040\\122\\157\\157\\164\\040\\103\\145\\162\\164\\151\\146\\151\\143\\141\\164\\151\\157\\156\\040\\101\\165\\164\\150\\157\\162\\151\\164\\171\\040\\105\\103\\103\\END$ 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\165\346\337\313\301\150\133\250

**END** 

#### CKA VALUE MULTILINE OCTAL

\060\202\002\215\060\202\002\002\024\240\003\002\001\002\002\010\165 \346\337\313\301\150\133\250\060\012\006\010\052\206\110\316\075 \004\003\002\060\174\061\013\060\011\006\003\125\004\006\023\002 \125\123\061\016\060\014\006\003\125\004\010\014\005\124\145\170  $\label{eq:condition} $$ 141\163\061\020\060\016\0006\003\125\004\007\014\007\110\157\165$ \163\164\157\156\061\030\060\026\006\003\125\004\012\014\017\123 \060\057\006\003\125\004\003\014\050\123\123\114\056\143\157\155 \040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164 \151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103 \103\060\036\027\015\061\066\060\062\061\062\061\070\061\064\060 \063\132\027\015\064\061\060\062\061\062\061\070\061\064\060\063  $\label{eq:condition} $$ 132\060\174\061\013\060\011\006\003\125\004\006\023\002\125\123$ \061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163 \061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164 \157\156\061\030\060\026\006\003\125\004\012\014\017\123\123\114 \040\103\157\162\160\157\162\141\164\151\157\156\061\061\060\057 \006\003\125\004\003\014\050\123\123\114\056\143\157\155\040\122 \157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157 \156\040\101\165\164\150\157\162\151\164\171\040\105\103\103\060 \004\000\042\003\142\000\004\105\156\251\120\304\246\043\066\236 \137\050\215\027\313\226\042\144\077\334\172\216\035\314\010\263 \242\161\044\272\216\111\271\004\033\107\226\130\253\055\225\310 \355\236\010\065\310\047\353\211\214\123\130\353\142\212\376\360 \133\017\153\061\122\143\101\073\211\315\354\354\266\215\031\323 \064\007\334\273\306\006\177\302\105\225\354\313\177\250\043\340 \011\351\201\372\363\107\323\243\143\060\141\060\035\006\003\125  $\label{eq:condition} $$ \035\016\004\026\004\024\202\321\205\163\060\347\065\004\323\216$  $\label{eq:condition} $$ \002\222\373\345\244\321\304\041\350\315\060\017\006\003\125\035 $$$ \023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125 \035\043\004\030\060\026\200\024\202\321\205\163\060\347\065\004 \323\216\002\222\373\345\244\321\304\041\350\315\060\016\006\003 \125\035\017\001\001\377\004\004\003\002\001\206\060\012\006\010 \052\206\110\316\075\004\003\002\003\147\000\060\144\002\060\157 \347\353\131\021\244\140\317\141\260\226\173\355\005\371\057\023 \221\334\355\345\374\120\153\021\106\106\263\034\041\000\142\273 \276\303\347\350\315\007\231\371\015\013\135\162\076\304\252\002

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "SSL.com Root Certification Authority ECC"
- # Issuer: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
- # Serial Number:75:e6:df:cb:c1:68:5b:a8
- # Subject: CN=SSL.com Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
- # Not Valid Before: Fri Feb 12 18:14:03 2016
- # Not Valid After: Tue Feb 12 18:14:03 2041
- # Fingerprint (SHA-256):
- 34:17:BB:06:CC:60:07:DA:1B:96:1C:92:0B:8A:B4:CE:3F:AD:82:0E:4A:A3:0B:9A:CB:C4:A7:4E:BD:CE:BC:65
- # Fingerprint (SHA1): C3:19:7C:39:24:E6:54:AF:1B:C4:AB:20:95:7A:E2:C3:0E:13:02:6A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSL.com Root Certification Authority ECC"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \303\031\174\071\044\346\124\257\033\304\253\040\225\172\342\303$ 

\016\023\002\152

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \056\332\344\071\177\234\217\067\321\160\237\046\027\121\072\216 $$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\174\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$ 

 $\label{eq:condition} $$ \020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157$ 

 $\label{eq:condition} $$ \frac{156 \cdot 061 \cdot 030 \cdot 060 \cdot 026 \cdot 006 \cdot 003 \cdot 125 \cdot 004 \cdot 012 \cdot 014 \cdot 017 \cdot 123 \cdot 123 \cdot 114 \cdot 040}{12014 \cdot 017 \cdot 123 \cdot 123 \cdot 114 \cdot 040} $$$ 

 $\label{eq:condition} $$103\157\162\160\157\162\141\164\151\157\156\061\061\060\057\006$ 

 $\\ \\003\\125\\004\\003\\014\\050\\123\\123\\114\\056\\143\\157\\155\\040\\122\\157$ 

\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156

 $\label{eq:condition} $$ \040\101\165\164\150\157\162\151\164\171\040\105\103\103$ 

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\010\165\346\337\313\301\150\133\250$$ 

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Certificate "SSL.com EV Root Certification Authority RSA R2"

#

# Issuer: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL Corporation,L=Houston,ST=Texas,C=US

# Serial Number:56:b6:29:cd:34:bc:78:f6

# Subject: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL

Corporation, L=Houston, ST=Texas, C=US

# Not Valid Before: Wed May 31 18:14:37 2017

# Not Valid After: Fri May 30 18:14:37 2042

# Fingerprint (SHA-256):

2E:7B:F1:6C:C2:24:85:A7:BB:E2:AA:86:96:75:07:61:B0:AE:39:BE:3B:2F:E9:D0:CC:6D:4E:F7:34:91:42:5C

# Fingerprint (SHA1): 74:3A:F0:52:9B:D0:32:A0:F4:4A:83:CD:D4:BA:A9:7B:7C:2E:C4:9A

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "SSL.com EV Root Certification Authority RSA R2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123$ 

\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163

 $\label{eq:condition} $$ \006\003\125\004\007\014\007\110\157\165\163\164$$$ 

 $\label{eq:condition} $$ \frac{157}{156}061\030\060\026\006\003\125\004\012\014\017\123\123\114$$ 

 $\\ \langle 040 \rangle 103 \rangle 157 \rangle 162 \rangle 160 \rangle 157 \rangle 162 \rangle 141 \rangle 164 \rangle 151 \rangle 157 \rangle 156 \rangle 061 \rangle 067 \rangle 060 \rangle 065$ 

\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105

\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141

\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122

\123\101\040\122\062

**END** 

CKA\_ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:control} $$ \000\201\202\061\013\060\011\006\003\125\004\010\014\006\023\002\125\123\061\016\060\014\006\003\125\0004\0010\1014\005\124\145\170\141\163\164\157\156\061\030\060\003\125\0004\0012\014\017\123\123\114\040\103\157\162\160\1057\162\141\164\151\157\155\040\105\123\123\114\056\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162\164\151\146\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122\123\101\040\122\062$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\126\266\051\315\064\274\170\366

**END** 

#### CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\353\060\202\003\323\240\003\002\001\002\002\001\126 \266\051\315\064\274\170\366\060\015\006\011\052\206\110\206\367 \015\001\001\001\013\005\000\060\201\202\061\013\060\011\006\003\125

\004\006\023\002\125\123\061\016\060\014\006\003\125\004\010\014 \005\124\145\170\141\163\061\020\060\016\006\003\125\004\007\014 \007\110\157\165\163\164\157\156\061\030\060\026\006\003\125\004 \012\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151 \157\156\061\067\060\065\006\003\125\004\003\014\056\123\123\114 \056\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162 \164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157 \162\151\164\171\040\122\123\101\040\122\062\060\036\027\015\061  $\label{eq:condition} $$ \067\060\065\063\061\061\070\061\064\063\067\132\027\015\064\062$ \060\065\063\060\061\070\061\064\063\067\132\060\201\202\061\013 \060\011\006\003\125\004\006\023\002\125\123\061\016\060\014\006  $\label{eq:condition} $$ \003\125\004\010\014\005\124\145\170\141\163\061\020\060\016\006$ \003\125\004\007\014\007\110\157\165\163\164\157\156\061\030\060  $\label{eq:condition} $$ \006\003\125\004\012\014\017\123\123\114\040\103\157\162\160$$ \157\162\141\164\151\157\156\061\067\060\065\006\003\125\004\003 \014\056\123\123\114\056\143\157\155\040\105\126\040\122\157\157 \101\165\164\150\157\162\151\164\171\040\122\123\101\040\122\062 \060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  $\label{eq:condition} $$ \001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\012$ \000\217\066\145\100\341\326\115\300\327\264\351\106\332\153\352 \063\107\315\114\371\175\175\276\275\055\075\360\333\170\341\206  $\label{eq:condition} $$ 245\331\272\011\127\150\355\127\076\240\320\010\101\203\347\050 $$$ \101\044\037\343\162\025\320\001\032\373\136\160\043\262\313\237 \071\343\317\305\116\306\222\155\046\306\173\273\263\332\047\235 \012\206\351\201\067\005\376\360\161\161\354\303\034\351\143\242 \027\024\235\357\033\147\323\205\125\002\002\326\111\311\314\132 \341\261\367\157\062\237\311\324\073\210\101\250\234\275\313\253 \333\155\173\011\037\242\114\162\220\332\053\010\374\317\074\124 \316\147\017\250\317\135\226\031\013\304\343\162\353\255\321\175  $\\ \langle 035 \rangle 047 \rangle 357 \langle 222 \rangle 353 \rangle 020 \rangle 277 \rangle 133 \rangle 353 \rangle 073 \rangle 257 \rangle 317 \rangle 200 \rangle 335 \rangle 301 \rangle 322 \rangle 357 \rangle$ \226\004\133\172\176\244\251\074\070\166\244\142\216\240\071\136 \352\167\317\135\000\131\217\146\054\076\007\242\243\005\046\021 \151\227\352\205\267\017\226\013\113\310\100\341\120\272\056\212 \313\367\017\232\042\347\177\232\067\023\315\362\115\023\153\041 \321\300\314\042\362\241\106\366\104\151\234\312\141\065\007\000 \157\326\141\010\021\352\272\270\366\351\263\140\345\115\271\354 \237\024\146\311\127\130\333\315\207\151\370\212\206\022\003\107 \277\146\023\166\254\167\175\064\044\205\203\315\327\252\234\220 \032\237\041\054\177\170\267\144\270\330\350\246\364\170\263\125 \313\204\322\062\304\170\256\243\217\141\335\316\010\123\255\354 \210\374\025\344\232\015\346\237\032\167\316\114\217\270\024\025 \075\142\234\206\070\006\000\146\022\344\131\166\132\123\300\002 \230\242\020\053\150\104\173\216\171\316\063\112\166\252\133\201  $\label{eq:condition} $$ \026\033\265\212\330\320\000\173\136\142\264\011\326\206\143\016 $$$ \246\005\225\111\272\050\213\210\223\262\064\034\330\244\125\156 \267\034\320\336\231\125\073\043\364\042\340\371\051\146\046\354  $\label{eq:condition} $$ \040\120\167\333\112\013\217\276\345\002\140\160\101\136\324\256$ 

\120\071\042\024\046\313\262\073\163\164\125\107\007\171\201\071 \250\060\023\104\345\004\212\256\226\023\045\102\017\271\123\304 \233\374\315\344\034\336\074\372\253\326\006\112\037\147\246\230 \060\034\335\054\333\334\030\225\127\146\306\377\134\213\126\365 \167\002\003\001\000\001\243\143\060\141\060\017\006\003\125\035 \023\001\001\377\004\005\060\003\001\001\377\060\037\006\003\125 \035\043\004\030\060\026\200\024\371\140\273\324\343\325\064\366 \270\365\006\200\045\247\163\333\106\151\250\236\060\035\006\003 \125\035\016\004\026\004\024\371\140\273\324\343\325\064\366\270 \365\006\200\045\247\163\333\106\151\250\236\060\016\006\003\125 \035\017\001\001\377\004\004\003\002\001\206\060\015\006\011\052  $\label{eq:condition} $$ \206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\126$ \263\216\313\012\235\111\216\277\244\304\221\273\146\027\005\121 \230\165\373\345\120\054\172\236\361\024\372\253\323\212\076\377 \221\051\217\143\213\330\264\251\124\001\015\276\223\206\057\371 \112\155\307\136\365\127\371\312\125\034\022\276\107\017\066\305  $\label{eq:condition} $$ \frac{337}{152}267\frac{333}{165}\frac{302}{107}\frac{45}{177}\frac{361}{143}\frac{370}{150}\frac{55}{125} $$$ \004\321\362\215\260\244\317\274\074\136\037\170\347\245\240\040 \160\260\004\305\267\367\162\247\336\042\015\275\063\045\106\214 \144\222\046\343\076\056\143\226\332\233\214\075\370\030\011\327 \003\314\175\206\202\340\312\004\007\121\120\327\377\222\325\014 \357\332\206\237\231\327\353\267\257\150\342\071\046\224\272\150  $\label{eq:condition} $$ \267\277\203\323\352\172\147\075\142\147\256\045\345\162\350\342$$ \344\354\256\022\366\113\053\074\237\351\260\100\363\070\124\263 \375\267\150\310\332\306\217\121\074\262\373\221\334\034\347\233 \235\341\267\015\162\217\342\244\304\251\170\371\353\024\254\306 \103\005\302\145\071\050\030\002\303\202\262\235\005\276\145\355  $\verb|\|226|137|145|164|074|373|011|065|056|173|234|023|375|033|017|135|$ \307\155\201\072\126\017\314\073\341\257\002\057\042\254\106\312 \106\074\240\034\114\326\104\264\136\056\134\025\146\011\341\046  $\label{eq:condition} $$ \051\376\306\122\141\272\261\163\377\303\014\234\345\154\152\224 $$$ \077\024\312\100\026\225\204\363\131\251\254\137\114\141\223\155 \321\073\314\242\225\014\042\246\147\147\104\056\271\331\322\212 \101\263\146\013\132\373\175\043\245\362\032\260\377\336\233\203 \224\056\321\077\337\222\267\221\257\005\073\145\307\240\154\261 \315\142\022\303\220\033\343\045\316\064\274\157\167\166\261\020 \303\367\005\032\300\326\257\164\142\110\027\167\222\151\220\141 \034\336\225\200\164\124\217\030\034\303\363\003\320\277\244\103  $\label{eq:condition} $$ 165 \ 206 \ 123 \ 030 \ 172 \ 012 \ 056 \ 011 \ 034 \ 066 \ 237 \ 221 \ 375 \ 202 \ 212 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042 \ 042$ \113\321\016\120\045\335\313\003\014\027\311\203\000\010\116\065 \115\212\213\355\360\002\224\146\054\104\177\313\225\047\226\027 \255\011\060\254\266\161\027\156\213\027\366\034\011\324\055\073 \230\245\161\323\124\023\331\140\363\365\113\146\117\372\361\356 \040\022\215\264\254\127\261\105\143\241\254\166\251\302\373 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "SSL.com EV Root Certification Authority RSA R2"
# Issuer: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:56:b6:29:cd:34:bc:78:f6
# Subject: CN=SSL.com EV Root Certification Authority RSA R2,O=SSL
Corporation,L=Houston,ST=Texas,C=US
# Not Valid Before: Wed May 31 18:14:37 2017
# Not Valid After: Fri May 30 18:14:37 2042
# Fingerprint (SHA-256):
2E:7B:F1:6C:C2:24:85:A7:BB:E2:AA:86:96:75:07:61:B0:AE:39:BE:3B:2F:E9:D0:CC:6D:4E:F7:34:91:42:5C
# Fingerprint (SHA1): 74:3A:F0:52:9B:D0:32:A0:F4:4A:83:CD:D4:BA:A9:7B:7C:2E:C4:9A
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "SSL.com EV Root Certification Authority RSA R2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\164\072\360\122\233\320\062\240\364\112\203\315\324\272\251\173
\174\056\304\232
END
CKA CERT MD5 HASH MULTILINE OCTAL
\341\036\061\130\032\256\124\123\002\366\027\152\021\173\115\225
END
CKA ISSUER MULTILINE OCTAL
\060\201\202\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163
\061\020\060\016\006\003\125\004\007\014\007\110\157\165\163\164
\label{eq:condition} $$ \frac{157}{156}061 \times 030 \times 060 \times 026 \times 006 \times 03125 \times 04012 \times 014 \times 017123 \times 123114 \times 0160 \times 
\040\103\157\162\160\157\162\141\164\151\157\156\061\067\060\065
\006\003\125\004\003\014\056\123\123\114\056\143\157\155\040\105
\164\151\157\156\040\101\165\164\150\157\162\151\164\171\040\122
\123\101\040\122\062
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\010\126\266\051\315\064\274\170\366
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "SSL.com EV Root Certification Authority ECC"
# Issuer: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
# Serial Number:2c:29:9c:5b:16:ed:05:95
# Subject: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US
```

# Not Valid Before: Fri Feb 12 18:15:23 2016

# Not Valid After: Tue Feb 12 18:15:23 2041

# Fingerprint (SHA-256):

22:A2:C1:F7:BD:ED:70:4C:C1:E7:01:B5:F4:08:C3:10:88:0F:E9:56:B5:DE:2A:4A:44:F9:9C:87:3A:25:A7:C8

# Fingerprint (SHA1): 4C:DD:51:A3:D1:F5:20:32:14:B0:C6:C5:32:23:03:91:C7:46:42:6D

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "SSL.com EV Root Certification Authority ECC"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:control} $$ \000\17\061\013\060\011\006\003\125\004\000\023\002\125\123\061\016\060\014\006\003\125\004\001\014\0005\124\145\170\141\163\061\020\060\0016\0006\003\125\0004\0012\014\0017\123\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006\003\125\0004\003\125\0004\003\123\123\114\056\143\157\155\040\105\126\004\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\004\0101\165\164\150\157\162\151\164\171\004\0105\103\103\103$ 

**END** 

CKA\_ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:continuous} $$ \000\17\061\013\060\011\006\003\125\004\000\0023\002\125\123\061\006\000\016\006\003\125\0004\0007\011\007\110\157\165\163\164\157\156\061\030\060\026\0006\003\125\0004\0012\014\017\123\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006\003\125\0004\003\125\0004\003\123\123\114\056\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157\156\0040\101\165\164\150\157\162\151\164\171\0040\105\103\103$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\054\051\234\133\026\355\005\225

**END** 

#### CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\202\002\224\060\202\003\2240\0003\002\001\002\000\010\054\0051\234\133\026\355\005\225\060\012\006\010\052\206\110\316\075\004\0003\002\060\177\061\013\060\011\006\0003\125\004\0006\0023\002\125\123\061\016\060\014\006\0003\125\0004\0007\110\157\165\163\164\157\156\061\030\060\026\006\0003\125\0004\0007\110\157\165\163\140\140\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006\0003\125\0004\0003\123\114\056\143\157\155\040\105\126\040\122\157\157\164\040\103\145\162\164\151\146\151\146\151\146\151\146\151\146\151\164\171$ 

\040\105\103\103\060\036\027\015\061\066\060\062\061\062\061\070 \061\065\062\063\132\027\015\064\061\060\062\061\062\061\070\061  $\\ \begin{tabular}{l} $$ \begin{tabular}{l} $$ \begin{tabular}{l} $\begin{tabular}{l} $\begin{tabular}{l}$  $\label{eq:condition} $$ \002\125\123\061\016\060\014\006\003\125\004\010\014\005\124\145 $$$ \170\141\163\061\020\060\016\006\003\125\004\007\014\007\110\157 \165\163\164\157\156\061\030\060\026\006\003\125\004\012\014\017 \123\123\114\040\103\157\162\160\157\162\141\164\151\157\156\061 \064\060\062\006\003\125\004\003\014\053\123\123\114\056\143\157 \155\040\105\126\040\122\157\157\164\040\103\145\162\164\151\146 \151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164  $\label{eq:condition} $$ 171\040\105\103\103\060\166\060\020\006\007\052\206\110\316\075$  $\label{eq:condition} $$ \002\001\006\005\053\201\004\000\042\003\142\000\004\252\022\107$ \220\230\033\373\357\303\100\007\203\040\116\361\060\202\242\006 \321\362\222\206\141\362\366\041\150\312\000\304\307\352\103\000 \124\206\334\375\037\337\000\270\101\142\134\334\160\026\062\336 \037\231\324\314\305\007\310\010\037\141\026\007\121\075\175\134  $\label{eq:condition} $$ \070\123\343\065\070\214\337\315\237\331\056\015\112\266\031\056$ \132\160\132\006\355\276\360\241\260\312\320\011\051\243\143\060 \141\060\035\006\003\125\035\016\004\026\004\024\133\312\136\345 \336\322\201\252\315\250\055\144\121\266\331\162\233\227\346\117 \060\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001 \377\060\037\006\003\125\035\043\004\030\060\026\200\024\133\312 \136\345\336\322\201\252\315\250\055\144\121\266\331\162\233\227 \346\117\060\016\006\003\125\035\017\001\001\377\004\004\003\002  $\label{eq:condition} $$ \001\206\0012\006\010\052\206\110\316\075\004\003\002\003\150 $$$ \000\060\145\002\061\000\212\346\100\211\067\353\351\325\023\331 \312\324\153\044\363\260\075\207\106\130\032\354\261\337\157\373  $\label{eq:condition} $$ \frac{272\160\153\307\070\314\350\261\214\117\017\367\361\147\166}$ \016\203\320\036\121\217\002\060\075\366\043\050\046\114\306\140 \207\223\046\233\262\065\036\272\326\367\074\321\034\316\372\045  $\\ \sqrt{074} 246 \sqrt{032} 201 \sqrt{025} 133 \sqrt{363} \sqrt{022} \sqrt{17} 154 \sqrt{356} 145 \sqrt{212} \sqrt{311} \sqrt{207} \sqrt{250}$ \371\007\340\142\232\214\134\112

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "SSL.com EV Root Certification Authority ECC"
```

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

<sup>#</sup> Issuer: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

<sup>#</sup> Serial Number:2c:29:9c:5b:16:ed:05:95

<sup>#</sup> Subject: CN=SSL.com EV Root Certification Authority ECC,O=SSL Corporation,L=Houston,ST=Texas,C=US

<sup>#</sup> Not Valid Before: Fri Feb 12 18:15:23 2016

<sup>#</sup> Not Valid After: Tue Feb 12 18:15:23 2041

<sup>#</sup> Fingerprint (SHA-256):

<sup>22:</sup>A2:C1:F7:BD:ED:70:4C:C1:E7:01:B5:F4:08:C3:10:88:0F:E9:56:B5:DE:2A:4A:44:F9:9C:87:3A:25:A7:C8

<sup>#</sup> Fingerprint (SHA1): 4C:DD:51:A3:D1:F5:20:32:14:B0:C6:C5:32:23:03:91:C7:46:42:6D

```
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "SSL.com EV Root Certification Authority ECC"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\114\335\121\243\321\365\040\062\024\260\306\305\062\043\003\221
\307\106\102\155
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\131\123\042\145\203\102\001\124\300\316\102\271\132\174\362\220
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\177\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$
\016\060\014\006\003\125\004\010\014\005\124\145\170\141\163\061
\label{eq:condition} $$ \020\060\016\006\003\125\004\007\014\007\110\157\165\163\164\157 $$
\103\157\162\160\157\162\141\164\151\157\156\061\064\060\062\006
\label{eq:condition} $$ \003\125\004\003\014\053\123\123\114\056\143\157\155\040\105\126
\040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164
\151\157\156\040\101\165\164\150\157\162\151\164\171\040\105\103
\103
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\010\054\051\234\133\026\355\005\225
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "GlobalSign Root CA - R6"
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6
# Serial Number:45:e6:bb:03:83:33:c3:85:65:48:e6:ff:45:51
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA - R6
# Not Valid Before: Wed Dec 10 00:00:00 2014
# Not Valid After: Sun Dec 10 00:00:00 2034
# Fingerprint (SHA-256):
2C:AB:EA:FE:37:D0:6C:A2:2A:BA:73:91:C0:03:3D:25:98:29:52:C4:53:64:73:49:76:3A:3A:B5:AD:6C:CF:69
# Fingerprint (SHA1): 80:94:64:0E:B5:A7:A1:CA:11:9C:1F:DD:D5:9F:81:02:63:A7:FB:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root CA - R6"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \000\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157 $$
```

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

\142\141\154\123\151\147\156\040\122\157\157\164\040\103\101\040 \055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107 \154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125 \004\003\023\012\107\154\157\142\141\154\123\151\147\156 END

CKA ID UTF8 "0"

#### CKA ISSUER MULTILINE OCTAL

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\203\060\202\003\153\240\003\002\001\002\002\016\105 \346\273\003\203\063\303\205\145\110\346\377\105\121\060\015\006  $\label{eq:condition} $$ \011\052\206\110\206\367\015\001\001\014\005\000\060\114\061\040 $$$ \060\036\006\003\125\004\013\023\027\107\154\157\142\141\154\123 \151\147\156\040\122\157\157\164\040\103\101\040\055\040\122\066  $\label{eq:condition} $$ \061\023\060\021\006\003\125\004\012\023\012\107\154\157\142\141 $$$ \154\123\151\147\156\061\023\060\021\006\003\125\004\003\023\012 \107\154\157\142\141\154\123\151\147\156\060\036\027\015\061\064 \061\062\061\060\060\060\060\060\060\060\132\027\015\063\064\061 \062\061\060\060\060\060\060\060\060\132\060\114\061\040\060\036  $\\ \\006\\ \\003\\ \\125\\ \\004\\ \\013\\ \\023\\ \\027\\ \\107\\ \\154\\ \\157\\ \\142\\ \\141\\ \\154\\ \\123\\ \\151\\ \\147$ \156\040\122\157\157\164\040\103\101\040\055\040\122\066\061\023 \060\021\006\003\125\004\012\023\012\107\154\157\142\141\154\123  $\label{eq:condition} $$ \frac{151}147\\156\\061\\023\\060\\021\\006\\003\\125\\004\\003\\023\\012\\107\\154$ \157\142\141\154\123\151\147\156\060\202\002\042\060\015\006\011 \052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000 \060\202\002\012\002\202\002\001\000\225\007\350\163\312\146\371 \354\024\312\173\074\367\015\010\361\264\105\013\054\202\264\110 \306\353\133\074\256\203\270\101\222\063\024\244\157\177\351\052 \314\306\260\210\153\305\266\211\321\306\262\377\024\316\121\024 \041\354\112\335\033\132\306\326\207\356\115\072\025\006\355\144  $\label{eq:condition} $$ \frac{146}013\\222\\200\\312\\104\\336\\163\\224\\116\\363\\247\\211\\177\\117\\170$ \212\032\200\267\031\201\016\176\304\212\274\144\114\041\034\103 \150\327\075\074\212\305\262\146\325\220\232\267\061\006\305\276 \342\155\062\006\246\036\371\271\353\252\243\270\277\276\202\143 \120\320\360\030\211\337\344\017\171\365\352\242\037\052\322\160  $\label{eq:condition} $$ \056\173\347\274\223\273\155\123\342\110\174\214\020\007\070\377$ \146\262\167\141\176\340\352\214\074\252\264\244\366\363\225\112 \022\007\155\375\214\262\211\317\320\240\141\167\310\130\164\260 \324\043\072\367\135\072\312\242\333\235\011\336\135\104\055\220

\361\201\315\127\222\372\176\274\120\004\143\064\337\153\223\030 \276\153\066\262\071\344\254\044\066\267\360\357\266\034\023\127 \223\266\336\262\370\342\205\267\163\242\270\065\252\105\362\340 \235\066\241\157\124\212\361\162\126\156\056\210\305\121\102\104 \025\224\356\243\305\070\226\233\116\116\132\013\107\363\006\066 \111\167\060\274\161\067\345\246\354\041\010\165\374\346\141\026 \077\167\325\331\221\227\204\012\154\324\002\115\164\300\024\355 \375\071\373\203\362\136\024\241\004\260\013\351\376\356\217\341  $\label{eq:condition} $$ \frac{156}{013}262\frac{010}{263}\frac{141}{146}\frac{011}{152}\frac{261}{006}\frac{072}{145}\frac{226}{131}\frac{300}{300} $$$ \360\065\375\311\332\050\215\032\021\207\160\201\012\250\232\165 \035\236\072\206\005\000\236\333\200\326\045\371\334\005\236\047 \131\114\166\071\133\352\371\245\241\330\203\017\321\377\337\060 \021\371\205\317\063\110\365\312\155\144\024\054\172\130\117\323 \113\010\111\305\225\144\032\143\016\171\075\365\263\214\312\130  $\label{eq:condition} $$ \255\234\102\105\171\156\016\207\031\134\124\261\145\266\277\214$$ \233\334\023\351\015\157\270\056\334\147\156\311\213\021\265\204  $\label{eq:condition} $$ \024\212\000\031\160\203\171\221\227\221\324\032\047\277\067\036$ \062\007\330\024\143\074\050\114\257\002\003\001\000\001\243\143 \060\141\060\016\006\003\125\035\017\001\001\377\004\004\003\002  $\label{eq:condition} $$ \001\006\000\17\006\003\125\035\023\001\001\377\004\005\060\003\$ \001\001\377\060\035\006\003\125\035\016\004\026\004\024\256\154 \005\243\223\023\342\242\347\342\327\034\326\307\360\177\310\147  $\label{eq:condition} $$ 123\240\060\037\006\003\125\035\043\004\030\060\026\200\024\256$ \154\005\243\223\023\342\242\347\342\327\034\326\307\360\177\310 \147\123\240\060\015\006\011\052\206\110\206\367\015\001\001\014 \005\000\003\202\002\001\000\203\045\355\350\321\375\225\122\315 \236\300\004\240\221\151\346\134\320\204\336\334\255\242\117\350  $\label{eq:condition} $$ 107\170\326\145\230\251\133\250\074\207\174\002\212\321\156\267 $$$ \026\163\346\137\300\124\230\325\164\276\301\315\342\021\221\255 \043\030\075\335\341\162\104\226\264\225\136\300\173\216\231\170  $\label{eq:condition} $$ \026\103\023\126\127\263\242\263\073\265\167\334\100\162\254\243$ \353\233\065\076\261\010\041\241\347\304\103\067\171\062\276\265 \347\234\054\114\274\103\051\231\216\060\323\254\041\340\343\035 \372\330\007\063\166\124\000\042\052\271\115\040\056\160\150\332 \345\123\374\203\134\323\235\362\377\104\014\104\146\362\322\343 \275\106\000\032\155\002\272\045\135\215\241\061\121\335\124\106 \034\115\333\231\226\357\032\034\004\134\246\025\357\170\340\171 \376\135\333\076\252\114\125\375\232\025\251\157\341\246\373\337  $\label{eq:condition} $$ 160\060\351\303\356\102\106\355\302\223\005\211\372\175\143\173$ \077\320\161\201\174\000\350\230\256\016\170\064\303\045\373\257 \012\237\040\153\335\073\023\217\022\214\342\101\032\110\172\163 \240\167\151\307\266\134\177\202\310\036\376\130\033\050\053\250 \154\255\136\155\300\005\322\173\267\353\200\376\045\067\376\002 \233\150\254\102\135\303\356\365\314\334\360\120\165\322\066\151 \234\346\173\004\337\156\006\151\266\336\012\011\110\131\207\353 \173\024\140\172\144\252\151\103\357\221\307\114\354\030\335\154 \357\123\055\214\231\341\136\362\162\076\317\124\310\275\147\354 \244\017\114\105\377\323\271\060\043\007\114\217\020\277\206\226

 $\label{eq:control_stress} $$ 31\231\132\264\231\127\034\244\314\273\025\211\123\272\054\005\017\344\304\236\031\261\030\064\325\114\235\272\355\367\037\257\044\225\004\170\250\003\273\356\201\345\332\137\174\213\112\241\220\164\045\247\263\076\113\310\054\126\275\307\310\357\070\342\134\222\360\171\367\234\204\272\164\055\141\001\040\176\176\321\362\117\007\131\137\213\055\103\122\353\106\014\224\341\365\146\107\171\167\325\124\133\037\255\044\067\313\105\132\116\240\104\110\310\330\260\231\305\025\204\011\366\326\111\111\300\145\270\346\032\161\156\240\250\361\202\350\105\076\154\326\002\327\012\147\203\005\132\311\244\020$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "GlobalSign Root CA R6"
- # Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA R6
- # Serial Number:45:e6:bb:03:83:33:c3:85:65:48:e6:ff:45:51
- # Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign Root CA R6
- # Not Valid Before: Wed Dec 10 00:00:00 2014
- # Not Valid After: Sun Dec 10 00:00:00 2034
- # Fingerprint (SHA-256):
- 2C:AB:EA:FE:37:D0:6C:A2:2A:BA:73:91:C0:03:3D:25:98:29:52:C4:53:64:73:49:76:3A:3A:B5:AD:6C:CF:69
- # Fingerprint (SHA1): 80:94:64:0E:B5:A7:A1:CA:11:9C:1F:DD:D5:9F:81:02:63:A7:FB:D1
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA PRIVATE CK BBOOL CK FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA LABEL UTF8 "GlobalSign Root CA R6"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\200\224\144\016\265\247\241\312\021\234\037\335\325\237\201\002 \143\247\373\321

**END** 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

CKA ISSUER MULTILINE OCTAL

\060\114\061\040\060\036\006\003\125\004\013\023\027\107\154\157

 $\\ 142\\141\\154\\123\\151\\147\\156\\040\\122\\157\\157\\164\\040\\103\\101\\040$ 

 $\label{eq:condition} $$ \055\040\122\066\061\023\060\021\006\003\125\004\012\023\012\107 $$$ 

\154\157\142\141\154\123\151\147\156\061\023\060\021\006\003\125

 $\\ \\004\\ \\003\\ \\023\\ \\012\\ \\107\\ \\154\\ \\157\\ \\142\\ \\141\\ \\154\\ \\123\\ \\151\\ \\147\\ \\156$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\016\105\346\273\003\203\063\303\205\145\110\346\377\105\121 $$$ 

**END** 

 ${\tt CKA\_TRUST\_SERVER\_AUTH\ CK\_TRUST\ CKT\_NSS\_TRUSTED\_DELEGATOR}$ 

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

# CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "OISTE WISeKey Global Root GC CA"

#

- # Issuer: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
- # Serial Number:21:2a:56:0c:ae:da:0c:ab:40:45:bf:2b:a2:2d:3a:ea
- # Subject: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH
- # Not Valid Before: Tue May 09 09:48:34 2017
- # Not Valid After: Fri May 09 09:58:33 2042
- # Fingerprint (SHA-256):
- 85:60:F9:1C:36:24:DA:BA:95:70:B5:FE:A0:DB:E3:6F:F1:1A:83:23:BE:94:86:85:4F:B3:F3:4A:55:71:19:8D
- # Fingerprint (SHA1): E0:11:84:5E:34:DE:BE:88:81:B9:9C:F6:16:26:D1:96:1F:C3:B9:31
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "OISTE WISeKey Global Root GC CA"
- CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509
- CKA SUBJECT MULTILINE OCTAL
- \060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
- $\label{eq:condition} $$ \000\0016\006\003\125\004\012\023\007\127\111\123\145\113\145$$
- $\label{eq:condition} $$ \frac{171 \cdot 061 \cdot 042 \cdot 060 \cdot 040 \cdot 006 \cdot 003 \cdot 125 \cdot 004 \cdot 013 \cdot 023 \cdot 031 \cdot 117 \cdot 111 \cdot 123 \cdot 124 \cdot 061 \cdot 06$
- \105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
- \157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
- \117\111\123\124\105\040\127\111\123\145\113\145\171\040\107\154
- $\label{eq:condition} $$ \frac{157}142\\141\\154\\040\\122\\157\\157\\164\\040\\107\\103\\040\\103\\101$

**END** 

CKA\_ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061$ 

 $\label{eq:condition} $$ \000\0016\006\003\125\004\012\023\007\127\111\123\145\113\145$ 

\171\061\042\060\040\006\003\125\004\013\023\031\117\111\123\124

\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037

 $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ 

END

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\041\052\126\014\256\332\014\253\100\105\277\053\242\055 \072\352

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\151\060\202\001\357\240\003\002\001\002\002\020\041 \052\126\014\256\332\014\253\100\105\277\053\242\055\072\352\060 \012\006\010\052\206\110\316\075\004\003\003\060\155\061\013\060

\011\006\003\125\004\006\023\002\103\110\061\020\060\016\006\003

\125\004\012\023\007\127\111\123\145\113\145\171\061\042\060\040 \006\003\125\004\013\023\031\117\111\123\124\105\040\106\157\165 \156\144\141\164\151\157\156\040\105\156\144\157\162\163\145\144 \061\050\060\046\006\003\125\004\003\023\037\117\111\123\124\105  $\\ \\ 040\\ \\ 127\\ \\ 111\\ \\ 123\\ \\ 145\\ \\ 113\\ \\ 145\\ \\ 171\\ \\ 040\\ \\ 107\\ \\ 154\\ \\ 157\\ \\ 142\\ \\ 141\\ \\ 154\\ \\ 040$ \122\157\157\164\040\107\103\040\103\101\060\036\027\015\061\067 \060\065\060\071\060\071\064\070\063\064\132\027\015\064\062\060  $\label{eq:condition} $$ \065\060\071\066\070\063\063\132\060\155\061\013\060\011 $$$  $\label{eq:condition} $$ \006\003\125\004\006\023\002\103\110\061\020\060\016\006\003\125$ \004\012\023\007\127\111\123\145\113\145\171\061\042\060\040\006  $\\ \\003\\125\\004\\013\\023\\031\\117\\111\\123\\124\\105\\040\\106\\157\\165\\156$  $\\ 144 \\ 141 \\ 164 \\ 151 \\ 157 \\ 156 \\ 040 \\ 105 \\ 156 \\ 144 \\ 157 \\ 162 \\ 163 \\ 145 \\ 144 \\ 061 \\$ \050\060\046\006\003\125\004\003\023\037\117\111\123\124\105\040  $\label{eq:condition} $$ \frac{157}{157}\frac{64}{040}\frac{107}{103}\frac{040}{103}\frac{101}{060}\frac{66}{060}\frac{020}{006}\frac{007}{052} $$$ \206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  $\label{eq:condition} $$ \004\114\351\120\300\306\017\162\030\274\330\361\272\263\211\342 $$$ \171\112\243\026\247\153\124\044\333\121\377\352\364\011\044\303 \013\042\237\313\152\047\202\201\015\322\300\257\061\344\164\202 \156\312\045\331\214\165\235\361\333\320\232\242\113\041\176\026 \247\143\220\322\071\324\261\207\170\137\030\226\017\120\033\065  $\label{eq:condition} $$ \067\017\152\306\334\331\023\115\244\216\220\067\346\275\133\061 $$$  $\label{eq:condition} $$ \221\243\124\060\122\060\016\006\003\125\035\017\001\001\377\004$ \004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004 \024\110\207\024\254\343\303\236\220\140\072\327\312\211\356\323 \255\214\264\120\146\060\020\006\011\053\006\001\004\001\202\067  $\label{eq:condition} $$ \025\001\004\003\002\001\000\060\012\006\010\052\206\110\316\075$ \004\003\003\003\150\000\060\145\002\060\046\307\151\133\334\325 \347\262\347\310\014\214\214\303\335\171\214\033\143\325\311\122 \224\116\115\202\112\163\036\262\200\204\251\045\300\114\132\155 \111\051\140\170\023\342\176\110\353\144\002\061\000\333\064\040 \062\010\377\232\111\002\266\210\336\024\257\135\154\231\161\215 \032\077\213\327\340\242\066\206\034\007\202\072\166\123\375\302  $\label{eq:condition} $\242\355\357\173\260\200\117\130\017\113\123\071\275$$ **END** 

CKA NSS MOZILLA CA POLICY CK BBOOL CK TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "OISTE WISeKey Global Root GC CA"

<sup>#</sup> Issuer: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH

<sup>#</sup> Serial Number:21:2a:56:0c:ae:da:0c:ab:40:45:bf:2b:a2:2d:3a:ea

<sup>#</sup> Subject: CN=OISTE WISeKey Global Root GC CA,OU=OISTE Foundation Endorsed,O=WISeKey,C=CH

<sup>#</sup> Not Valid Before: Tue May 09 09:48:34 2017

<sup>#</sup> Not Valid After: Fri May 09 09:58:33 2042

<sup>#</sup> Fingerprint (SHA-256):

<sup>85:60:</sup>F9:1C:36:24:DA:BA:95:70:B5:FE:A0:DB:E3:6F:F1:1A:83:23:BE:94:86:85:4F:B3:F3:4A:55:71:19:8D

```
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "OISTE WISeKey Global Root GC CA"
CKA CERT SHA1 HASH MULTILINE OCTAL
\label{eq:condition} $$ 340\021\204\136\064\336\276\210\201\271\234\366\026\046\321\226 $$
\037\303\271\061
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\251\326\271\055\057\223\144\370\245\151\312\221\351\150\007\043
END
CKA_ISSUER MULTILINE_OCTAL
\label{eq:condition} $$ \060\155\061\013\060\011\006\003\125\004\006\023\002\103\110\061
\020\060\016\006\003\125\004\012\023\007\127\111\123\145\113\145
\label{eq:condition} $$ \frac{171 \cdot 061 \cdot 042 \cdot 060 \cdot 040 \cdot 006 \cdot 003 \cdot 125 \cdot 004 \cdot 013 \cdot 023 \cdot 031 \cdot 117 \cdot 111 \cdot 123 \cdot 124 }{123 \cdot 124 \cdot 123 \cdot 124 \cdot 123 \cdot 124 }
\105\040\106\157\165\156\144\141\164\151\157\156\040\105\156\144
\157\162\163\145\144\061\050\060\046\006\003\125\004\003\023\037
\157\142\141\154\040\122\157\157\164\040\107\103\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\label{eq:condition} $$ \002\020\041\052\126\014\256\332\014\253\100\105\277\053\242\055$
\072\352
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "UCA Global G2 Root"
# Issuer: CN=UCA Global G2 Root,O=UniTrust,C=CN
# Serial Number:5d:df:b1:da:5a:a3:ed:5d:be:5a:65:20:65:03:90:ef
# Subject: CN=UCA Global G2 Root,O=UniTrust,C=CN
# Not Valid Before: Fri Mar 11 00:00:00 2016
# Not Valid After: Mon Dec 31 00:00:00 2040
# Fingerprint (SHA-256):
9B:EA:11:C9:76:FE:01:47:64:C1:BE:56:A6:F9:14:B5:A5:60:31:7A:BD:99:88:39:33:82:E5:16:1A:A0:49:3C
# Fingerprint (SHA1): 28:F9:78:16:19:7A:FF:18:25:18:AA:44:FE:C1:A0:CE:5C:B6:4C:8A
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "UCA Global G2 Root"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

# Fingerprint (SHA1): E0:11:84:5E:34:DE:BE:88:81:B9:9C:F6:16:26:D1:96:1F:C3:B9:31

#### CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \000\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061\021\006\003\125\004\012\156\151\124\162\165\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101\040\107\154\157\142\141\154\040\107\062\040\122\157\157\164$ END$ 

CKA ID UTF8 "0"

#### CKA ISSUER MULTILINE OCTAL

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\135\337\261\332\132\243\355\135\276\132\145\040\145\003 \220\357

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\106\060\202\003\056\240\003\002\001\002\002\020\135 \337\261\332\132\243\355\135\276\132\145\040\145\003\220\357\060 \015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\075 \061\013\060\011\006\003\125\004\006\023\002\103\116\061\021\060 \061\033\060\031\006\003\125\004\003\014\022\125\103\101\040\107 \154\157\142\141\154\040\107\062\040\122\157\157\164\060\036\027 \015\061\066\060\063\061\061\060\060\060\060\060\060\060\132\027\015 \064\060\061\062\063\061\060\060\060\060\060\060\060\132\060\075\061 \013\060\011\006\003\125\004\006\023\002\103\116\061\021\060\017 \006\003\125\004\012\014\010\125\156\151\124\162\165\163\164\061 \033\060\031\006\003\125\004\003\014\022\125\103\101\040\107\154  $\label{eq:condition} $$ \frac{157}{142}\frac{141}{154}\frac{040}{107}\frac{062}{040}\frac{122}{157}\frac{157}{164}\frac{060}{202}\frac{002}{042} $$$ \060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003 \202\002\017\000\060\202\002\012\002\202\002\001\000\305\346\053 \157\174\357\046\005\047\243\201\044\332\157\313\001\371\231\232 \251\062\302\042\207\141\101\221\073\313\303\150\033\006\305\114 \251\053\301\147\027\042\035\053\355\371\051\211\223\242\170\275 \222\153\240\243\015\242\176\312\223\263\246\321\214\065\325\165  $\label{eq:condition} $$ 371\027\366\317\105\305\345\172\354\167\223\240\217\043\256\016$$  $\label{eq:condition} $$ \032\03177\276\324\320\355\056\173\253\106\043\133\377\054\346 $$$ \124\172\224\300\052\025\360\311\215\260\172\073\044\341\327\150 \342\061\074\006\063\106\266\124\021\246\245\057\042\124\052\130 \015\001\002\361\372\025\121\147\154\300\372\327\266\033\177\321 \126\210\057\032\072\215\073\273\202\021\340\107\000\320\122\207 \253\373\206\176\017\044\153\100\235\064\147\274\215\307\055\206 \157\171\076\216\251\074\027\113\177\260\231\343\260\161\140\334 \013\365\144\303\316\103\274\155\161\271\322\336\047\133\212\350 \330\306\256\341\131\175\317\050\055\065\270\225\126\032\361\262 \130\113\267\022\067\310\174\263\355\113\200\341\215\372\062\043

\266\157\267\110\225\010\261\104\116\205\214\072\002\124\040\057 \337\277\127\117\073\072\220\041\327\301\046\065\124\040\354\307 \077\107\354\357\132\277\113\172\301\255\073\027\120\134\142\330 \017\113\112\334\053\372\156\274\163\222\315\354\307\120\350\101 \226\327\251\176\155\330\351\035\217\212\265\271\130\222\272\112 \217\223\211\255\333\275\243\236\041\312\211\031\354\337\265\303 \032\353\026\376\170\066\114\326\156\320\076\027\034\220\027\153 \046\272\373\172\057\277\021\034\030\016\055\163\003\217\240\345 \065\240\132\342\114\165\035\161\341\071\070\123\170\100\314\203 \223\327\012\236\235\133\217\212\344\345\340\110\344\110\262\107  $\label{eq:condition} $$ \frac{315}{116}052\frac{65}{052}\frac{362}{042}\frac{366}{311}\frac{276}{011}\frac{221}{226}\frac{127}{172} $$$ \210\210\254\356\160\254\371\334\051\343\014\034\073\022\116\104 \326\247\116\260\046\310\363\331\032\227\221\150\352\357\215\106 \073\244\064\211\267\171\022\057\107\305\347\251\227\151\374\246 \167\147\265\337\173\361\172\145\025\344\141\126\145\002\003\001 \000\001\243\102\060\100\060\016\006\003\125\035\017\001\001\377 \004\004\003\002\001\006\060\017\006\003\125\035\023\001\001\377  $\\ \\004\\\\005\\\\060\\\\003\\\\001\\\\001\\\\377\\\\060\\\\035\\\\006\\\\003\\\\125\\\\035\\\\016\\\\004\\\\026$ \004\024\201\304\214\314\365\344\060\377\245\014\010\137\214\025 \147\041\164\001\337\337\060\015\006\011\052\206\110\206\367\015  $\label{eq:condition} $$ \001\001\013\005\000\003\202\002\001\000\023\145\042\365\216\053$ \255\104\344\313\377\271\150\346\303\200\110\075\004\173\372\043 \057\172\355\066\332\262\316\155\366\346\236\345\137\130\217\313 \067\062\241\310\145\266\256\070\075\065\033\076\274\073\266\004 \320\274\371\111\365\233\367\205\305\066\266\313\274\370\310\071  $\label{eq:condition} $$ 325\344\137\007\275\025\124\227\164\312\312\355\117\272\272\144$ \166\237\201\270\204\105\111\114\215\157\242\353\261\314\321\303 \224\332\104\302\346\342\352\030\350\242\037\047\005\272\327\345  $\label{eq:condition} $$ 326 \times 1315 \times 335 \times 166 \times 230 \times 15 \times 000 \times 16 \times 15 \times 033 \times 372 \times 03267 \times 166 \times 160 \times 160$ \200\130\016\047\077\122\373\224\242\312\136\145\311\326\204\332 \271\065\161\363\046\300\117\167\346\201\047\322\167\073\232\024 \157\171\364\366\320\341\323\224\272\320\127\121\275\047\005\015 \301\375\310\022\060\356\157\215\021\053\010\235\324\324\277\200 \105\024\232\210\104\332\060\352\264\247\343\356\357\133\202\325 \076\326\255\170\222\333\134\074\363\330\255\372\270\153\177\304  $\label{eq:condition} $$ \066\050\266\002\025\212\124\054\234\260\027\163\216\320\067\243$  $\label{eq:condition} $$ \024\074\230\225\000\014\051\005\133\236\111\111\261\137\307\343$  $\label{eq:condition} $$ \frac{313}{317}047\frac{45}{216}065\frac{27}{267}\frac{127}{310}060\frac{331}{101}\frac{133}{271}024 $$ \266\350\302\017\224\061\247\224\230\314\152\353\265\341\047\365 \020\250\001\350\216\022\142\350\210\314\265\177\106\227\300\233  $\label{eq:condition} $$ \020\146\070\032\066\106\137\042\150\075\337\311\306\023\047\253$ \123\006\254\242\074\206\006\145\157\261\176\261\051\104\232\243 \272\111\151\050\151\217\327\345\137\255\004\206\144\157\032\240 \014\305\010\142\316\200\243\320\363\354\150\336\276\063\307\027 \133\177\200\304\114\114\261\246\204\212\303\073\270\011\315\024 \201\272\030\343\124\127\066\376\333\057\174\107\241\072\063\310  $\label{eq:control} $$ 371\130\073\104\117\261\312\002\211\004\226\050\150\305\113\270\046\211\273\326\063\057\120\325\376\232\211\272\030\062\222\124\306\133\340\235\371\136\345\015\042\233\366\332\342\310\041\262\142\041\252\206\100\262\056\144\323\137\310\343\176\021\147\105\037\005\376\343\242\357\263\250\263\363\175\217\370\014\037\042\037\055\160\264\270\001\064\166\060\000\345\043\170\247\126\327\120\037\212\373\006\365\302\031\360\320$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "UCA Global G2 Root"
- # Issuer: CN=UCA Global G2 Root,O=UniTrust,C=CN
- # Serial Number:5d:df:b1:da:5a:a3:ed:5d:be:5a:65:20:65:03:90:ef
- # Subject: CN=UCA Global G2 Root,O=UniTrust,C=CN
- # Not Valid Before: Fri Mar 11 00:00:00 2016
- # Not Valid After: Mon Dec 31 00:00:00 2040
- # Fingerprint (SHA-256):
- 9B:EA:11:C9:76:FE:01:47:64:C1:BE:56:A6:F9:14:B5:A5:60:31:7A:BD:99:88:39:33:82:E5:16:1A:A0:49:3C
- # Fingerprint (SHA1): 28:F9:78:16:19:7A:FF:18:25:18:AA:44:FE:C1:A0:CE:5C:B6:4C:8A
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "UCA Global G2 Root"
- CKA CERT SHA1 HASH MULTILINE OCTAL
- \050\371\170\026\031\172\377\030\045\030\252\104\376\301\240\316
- $\label{eq:condition} $$134\266\114\212$$

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\200\376\360\304\112\360\134\142\062\237\034\272\170\251\120\370

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\075\061\013\060\011\006\003\125\004\006\023\002\103\116\061

\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165

\163\164\061\033\060\031\006\003\125\004\003\014\022\125\103\101

 $\label{eq:condition} $$ \040\107\154\157\142\141\154\040\107\062\040\122\157\157\164$$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\135\337\261\332\132\243\355\135\276\132\145\040\145\003

\220\357

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

 ${\tt CKA\_TRUST\_EMAIL\_PROTECTION\ CK\_TRUST\ CKT\_NSS\_TRUSTED\_DELEGATOR}$ 

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Certificate "UCA Extended Validation Root"

#

# Issuer: CN=UCA Extended Validation Root,O=UniTrust,C=CN

# Serial Number:4f:d2:2b:8f:f5:64:c8:33:9e:4f:34:58:66:23:70:60

# Subject: CN=UCA Extended Validation Root,O=UniTrust,C=CN

# Not Valid Before: Fri Mar 13 00:00:00 2015

# Not Valid After: Fri Dec 31 00:00:00 2038

# Fingerprint (SHA-256):

D4:3A:F9:B3:54:73:75:5C:96:84:FC:06:D7:D8:CB:70:EE:5C:28:E7:73:FB:29:4E:B4:1E:E7:17:22:92:4D:24

# Fingerprint (SHA1): A3:A1:B0:6F:24:61:23:4A:E3:36:A5:C2:37:FC:A6:FF:DD:F0:D7:3A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "UCA Extended Validation Root"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061$$$ 

 $\label{eq:condition} $$ \021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165$ 

\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101

\164\151\157\156\040\122\157\157\164

**END** 

CKA\_ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061

 $\label{eq:condition} $$ \001\06\003\125\004\012\014\010\125\156\151\124\162\165$$ 

\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101

\164\151\157\156\040\122\157\157\164

END

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\117\322\053\217\365\144\310\063\236\117\064\130\146\043 \160\140

**END** 

# CKA VALUE MULTILINE OCTAL

\010\125\156\151\124\162\165\163\164\061\045\060\043\006\003\125 \004\003\014\034\125\103\101\040\105\170\164\145\156\144\145\144 \040\126\141\154\151\144\141\164\151\157\156\040\122\157\157\164 \060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001 \001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001  $\label{eq:condition} $$ \000\251\011\007\050\023\002\260\231\340\144\252\036\103\026\172 $$$ \163\261\221\240\165\076\250\372\343\070\000\172\354\211\152\040 \017\213\305\260\233\063\003\132\206\306\130\206\325\301\205\273 \117\306\234\100\115\312\276\356\151\226\270\255\201\060\232\174 \222\005\353\005\053\232\110\320\270\166\076\226\310\040\273\322 \260\361\217\330\254\105\106\377\252\147\140\264\167\176\152\037  $\label{eq:condition} $$ \074\032\122\172\004\075\007\074\205\015\204\320\037\166\012\367$ \152\024\337\162\343\064\174\127\116\126\001\076\171\361\252\051 \073\154\372\370\217\155\115\310\065\337\256\353\334\044\356\171  $\label{eq:condition} $$ 105\247\205\266\005\210\336\210\135\045\174\227\144\147\011\331 $$$ \277\132\025\005\206\363\011\036\354\130\062\063\021\363\167\144 \260\166\037\344\020\065\027\033\362\016\261\154\244\052\243\163 \374\011\037\036\062\031\123\021\347\331\263\054\056\166\056\241 \243\336\176\152\210\011\350\362\007\212\370\262\315\020\347\342 \163\100\223\273\010\321\077\341\374\013\224\263\045\357\174\246 \327\321\257\237\377\226\232\365\221\173\230\013\167\324\176\350 \007\322\142\265\225\071\343\363\361\155\017\016\145\204\212\143  $\label{eq:condition} $$ 124\305\200\266\340\236\113\175\107\046\247\001\010\135\321\210 $$$ \236\327\303\062\104\372\202\112\012\150\124\177\070\123\003\314 \244\000\063\144\121\131\013\243\202\221\172\136\354\026\302\363 \052\346\142\332\052\333\131\142\020\045\112\052\201\013\107\007 \103\006\160\207\322\372\223\021\051\172\110\115\353\224\307\160 \115\257\147\325\121\261\200\040\001\001\264\172\010\246\220\177 \116\340\357\007\101\207\257\152\245\136\213\373\317\120\262\232 \124\257\303\211\272\130\055\365\060\230\261\066\162\071\176\111  $\\ \\004\\375\\051\\247\\114\\171\\344\\005\\127\\333\\224\\271\\026\\123\\215\\106$ \263\035\225\141\127\126\177\257\360\026\133\141\130\157\066\120 \021\013\330\254\053\225\026\032\016\037\010\315\066\064\145\020 \142\146\325\200\137\024\040\137\055\014\240\170\012\150\326\054 \327\351\157\053\322\112\005\223\374\236\157\153\147\377\210\361 \116\245\151\112\122\067\005\352\306\026\215\322\304\231\321\202 \053\073\272\065\165\367\121\121\130\363\310\007\335\344\264\003 \177\002\003\001\000\001\243\102\060\100\060\035\006\003\125\035  $\label{eq:condition} $$ \004\026\004\024\331\164\072\344\060\075\015\367\022\334\176$ \132\005\237\036\064\232\367\341\024\060\017\006\003\125\035\023 \001\001\377\004\005\060\003\001\001\377\060\016\006\003\125\035 \017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206 \110\206\367\015\001\001\013\005\000\003\202\002\001\000\066\215 \227\314\102\025\144\051\067\233\046\054\326\373\256\025\151\054 \153\032\032\367\137\266\371\007\114\131\352\363\311\310\271\256 \314\272\056\172\334\300\365\260\055\300\073\257\237\160\005\021 \152\237\045\117\001\051\160\343\345\014\341\352\132\174\334\111 \273\301\036\052\201\365\026\113\162\221\310\242\061\271\252\332

\374\235\037\363\135\100\002\023\374\116\034\006\312\263\024\220 \124\027\031\022\032\361\037\327\014\151\132\366\161\170\364\224 \375\161\232\370\101\007\241\315\221\344\074\232\340\233\062\071 \163\253\052\325\151\310\170\221\046\061\175\342\307\060\361\374  $\\ \ \langle 024 | 170 | 167 | 022 | 016 | 023 | 364 | 335 | 026 | 224 | 277 | 113 | 147 | 173 | 160 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123 | 123$ \205\312\260\273\363\070\115\054\220\071\300\015\302\135\153\351 \342\345\325\210\215\326\054\277\253\033\276\265\050\207\022\027 \164\156\374\175\374\217\320\207\046\260\033\373\271\154\253\342 \236\075\025\301\073\056\147\002\130\221\237\357\370\102\037\054 \267\150\365\165\255\317\265\366\377\021\175\302\360\044\245\255 \323\372\240\074\251\372\135\334\245\240\357\104\244\276\326\350 \345\344\023\226\027\173\006\076\062\355\307\267\102\274\166\243  $\label{eq:condition} $$ \30\145\070\053\070\065\121\041\016\016\157\056\064\023\100\341 $$$  $\label{eq:condition} $$ \053\147\014\155\112\101\060\030\043\132\062\125\231\311\027\340 $$$ \074\336\366\354\171\255\053\130\031\242\255\054\042\032\225\216 \276\226\220\135\102\127\304\371\024\003\065\053\034\055\121\127 \010\247\072\336\077\344\310\264\003\163\302\301\046\200\273\013 \102\037\255\015\257\046\162\332\314\276\263\243\203\130\015\202 \305\037\106\121\343\234\030\314\215\233\215\354\111\353\165\120 \325\214\050\131\312\164\064\332\214\013\041\253\036\352\033\345  $\label{eq:condition} $$ 307\375\025\076\300\027\252\373\043\156\046\106\313\372\371\261 $$$  $\label{eq:condition} $$ 162\153\151\317\042\204\013\142\017\254\331\031\000\224\242\166$$ \074\324\055\232\355\004\236\055\006\142\020\067\122\034\205\162  $\label{eq:condition} $$ \03\047\345\314\306\061\354\067\354\143\131\233\013\035\166\314$ \176\062\232\210\225\010\066\122\273\336\166\137\166\111\111\255 \177\275\145\040\262\311\301\053\166\030\166\237\126\261 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "UCA Extended Validation Root"
```

D4:3A:F9:B3:54:73:75:5C:96:84:FC:06:D7:D8:CB:70:EE:5C:28:E7:73:FB:29:4E:B4:1E:E7:17:22:92:4D:24

# Fingerprint (SHA1): A3:A1:B0:6F:24:61:23:4A:E3:36:A5:C2:37:FC:A6:FF:DD:F0:D7:3A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "UCA Extended Validation Root"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\243\241\260\157\044\141\043\112\343\066\245\302\067\374\246\377

<sup>#</sup> Issuer: CN=UCA Extended Validation Root,O=UniTrust,C=CN

<sup>#</sup> Serial Number:4f:d2:2b:8f:f5:64:c8:33:9e:4f:34:58:66:23:70:60

<sup>#</sup> Subject: CN=UCA Extended Validation Root,O=UniTrust,C=CN

<sup>#</sup> Not Valid Before: Fri Mar 13 00:00:00 2015

<sup>#</sup> Not Valid After: Fri Dec 31 00:00:00 2038

<sup>#</sup> Fingerprint (SHA-256):

```
\335\360\327\072
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\241\363\137\103\306\064\233\332\277\214\176\005\123\255\226\342
END
CKA ISSUER MULTILINE OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\021\060\017\006\003\125\004\012\014\010\125\156\151\124\162\165
\163\164\061\045\060\043\006\003\125\004\003\014\034\125\103\101
\040\105\170\164\145\156\144\145\144\040\126\141\154\151\144\141
\164\151\157\156\040\122\157\157\164
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\117\322\053\217\365\144\310\063\236\117\064\130\146\043
\160\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Certigna Root CA"
# Issuer: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR
# Serial Number:00:ca:e9:1b:89:f1:55:03:0d:a3:e6:41:6d:c4:e3:a6:e1
# Subject: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR
# Not Valid Before: Tue Oct 01 08:32:27 2013
# Not Valid After: Sat Oct 01 08:32:27 2033
# Fingerprint (SHA-256):
D4:8D:3D:23:EE:DB:50:A4:59:E5:51:97:60:1C:27:77:4B:9D:7B:18:C9:4D:5A:05:95:11:A1:02:50:B9:31:68
# Fingerprint (SHA1): 2D:0D:52:14:FF:9E:AD:99:24:01:74:20:47:6E:6C:85:27:27:F5:43
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Certigna Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061 $$
\022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157
\164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\063
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164
\151\147\156\141\040\122\157\157\164\040\103\101
END
```

CKA\_ISSUER MULTILINE\_OCTAL

CKA\_ID UTF8 "0"

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\312\351\033\211\361\125\003\015\243\346\101\155\304 \343\246\341

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\006\133\060\202\004\103\240\003\002\001\002\002\002\001 \312\351\033\211\361\125\003\015\243\346\101\155\304\343\246\341  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\013\005\000\060 $$$ \132\061\013\060\011\006\003\125\004\006\023\002\106\122\061\022 \151\163\061\034\060\032\006\003\125\004\013\014\023\060\060\060 \062\040\064\070\061\064\066\063\060\070\061\060\060\060\063\066  $\label{eq:condition} $$ \061\031\060\027\006\003\125\004\003\014\020\103\145\162\164\151 $$$ \147\156\141\040\122\157\157\164\040\103\101\060\036\027\015\061 \063\061\060\060\061\060\070\063\062\062\067\132\027\015\063\063  $\label{eq:condition} $$ \061\060\061\060\070\063\062\062\067\132\060\132\061\013\060$$$ \011\006\003\125\004\006\023\002\106\122\061\022\060\020\006\003 \125\004\012\014\011\104\150\151\155\171\157\164\151\163\061\034 \060\032\006\003\125\004\013\014\023\060\060\060\062\040\064\070 \061\064\066\063\060\070\061\060\060\060\063\066\061\031\060\027  $\label{eq:condition} $$ \006\003\125\004\003\014\020\103\145\162\164\151\147\156\141\040 $$$ \122\157\157\164\040\103\101\060\202\002\042\060\015\006\011\052 \206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060  $\label{eq:condition} $$ \202\002\002\002\001\000\315\030\071\145\032\131\261\352 $$$ \144\026\016\214\224\044\225\174\203\323\305\071\046\334\014\357 \026\127\215\327\330\254\243\102\177\202\312\355\315\133\333\016 \267\055\355\105\010\027\262\331\263\313\326\027\122\162\050\333 \216\116\236\212\266\013\371\236\204\232\115\166\336\042\051\134 \322\263\322\006\076\060\071\251\164\243\222\126\034\241\157\114 \012\040\155\237\043\172\264\306\332\054\344\035\054\334\263\050 \320\023\362\114\116\002\111\241\124\100\236\346\345\005\240\055 \204\310\377\230\154\320\353\212\032\204\010\036\267\150\043\356 \043\325\160\316\155\121\151\020\356\241\172\302\321\042\061\302 \202\205\322\362\125\166\120\174\045\172\311\204\134\013\254\335 \102\116\053\347\202\242\044\211\313\220\262\320\356\043\272\146 \114\273\142\244\371\123\132\144\173\174\230\372\243\110\236\017 \225\256\247\030\364\152\354\056\003\105\257\360\164\370\052\315 \172\135\321\276\104\046\062\051\361\361\365\154\314\176\002\041 \013\237\157\244\077\276\235\123\342\317\175\251\054\174\130\032 \227\341\075\067\067\030\146\050\322\100\305\121\212\214\303\055 \316\123\210\044\130\144\060\026\305\252\340\326\012\246\100\337

\170\366\365\004\174\151\023\204\274\321\321\247\006\317\001\367 \150\300\250\127\273\072\141\255\004\214\223\343\255\374\360\333 \104\155\131\334\111\131\256\254\232\231\066\060\101\173\166\063 \042\207\243\302\222\206\156\371\160\356\256\207\207\225\033\304 \172\275\061\363\324\322\345\231\377\276\110\354\165\365\170\026 \035\246\160\301\177\074\033\241\222\373\317\310\074\326\305\223 \012\217\365\125\072\166\225\316\131\230\212\011\225\167\062\232 \203\272\054\004\072\227\275\324\057\276\327\154\233\242\312\175 \155\046\311\125\325\317\303\171\122\010\011\231\007\044\055\144 \045\153\246\041\151\233\152\335\164\115\153\227\172\101\275\253  $\label{eq:condition} $$ \027\371\220\027\110\217\066\371\055\325\305\333\356\252\205\105$ \101\372\315\072\105\261\150\346\066\114\233\220\127\354\043\271 \207\010\302\304\011\361\227\206\052\050\115\342\164\300\332\304 \214\333\337\342\241\027\131\316\044\131\164\061\332\177\375\060 \155\331\334\341\152\341\374\137\002\003\001\000\001\243\202\001 \032\060\202\001\026\060\017\006\003\125\035\023\001\001\377\004  $\label{eq:condition} $$ \005\060\003\001\001\377\060\016\006\003\125\035\017\001\001\377$ \004\004\003\002\001\006\060\035\006\003\125\035\016\004\026\004 \024\030\207\126\340\156\167\356\044\065\074\116\163\232\037\326 \341\342\171\176\053\060\037\006\003\125\035\043\004\030\060\026 \200\024\030\207\126\340\156\167\356\044\065\074\116\163\232\037 \326\341\342\171\176\053\060\104\006\003\125\035\040\004\075\060  $\\ \ \langle 073 \rangle 060 \rangle 071 \rangle 006 \rangle 004 \rangle 125 \rangle 035 \rangle 040 \rangle 000 \rangle 060 \rangle 061 \rangle 060 \rangle 057 \rangle 006 \rangle 010 \rangle 053$ \006\001\005\005\007\002\001\026\043\150\164\164\160\163\072\057 \057\167\167\167\167\056\143\145\162\164\151\147\156\141\056\146 \162\057\141\165\164\157\162\151\164\145\163\057\060\155\006\003 \125\035\037\004\146\060\144\060\057\240\055\240\053\206\051\150 \164\164\160\072\057\057\143\162\154\056\143\145\162\164\151\147 \156\141\056\146\162\057\143\145\162\164\151\147\156\141\162\157 \157\164\143\141\056\143\162\154\060\061\240\057\240\055\206\053  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \157\164\151\163\056\143\157\155\057\143\145\162\164\151\147\156 \141\162\157\157\164\143\141\056\143\162\154\060\015\006\011\052 \206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\224 \270\236\117\360\343\225\010\042\347\315\150\101\367\034\125\325 \174\000\342\055\072\211\135\150\070\057\121\042\013\112\215\313 \351\273\135\076\273\134\075\261\050\376\344\123\125\023\317\241 \220\033\002\035\137\146\106\011\063\050\341\015\044\227\160\323  $\label{eq:condition} $$ \020\037\352\144\127\226\273\135\332\347\304\214\117\114\144\106$$  $\label{eq:condition} $$ \035\134\207\343\131\336\102\321\233\250\176\246\211\335\217\034$ \311\060\202\355\073\234\315\300\351\031\340\152\330\002\165\067 \253\367\064\050\050\221\362\004\012\117\065\343\140\046\001\372 \320\021\214\371\021\152\356\257\075\303\120\323\217\137\063\171 \074\206\250\163\105\220\214\040\266\162\163\027\043\276\007\145 \345\170\222\015\272\001\300\353\214\034\146\277\254\206\167\001 \224\015\234\346\351\071\215\037\246\121\214\231\014\071\167\341 \264\233\372\034\147\127\157\152\152\216\251\053\114\127\171\172 

\243\147\015\030\221\334\373\246\153\365\110\141\163\043\131\216 \002\247\274\104\352\364\111\235\361\124\130\371\140\257\332\030 \244\057\050\105\334\172\240\210\206\135\363\073\347\377\051\065 \200\374\144\103\224\346\343\034\157\276\255\016\052\143\231\053 \311\176\205\366\161\350\006\003\225\376\336\217\110\034\132\324 \222\350\053\356\347\061\333\272\004\152\207\230\347\305\137\357 \175\247\042\367\001\330\115\371\211\320\016\232\005\131\244\236 \230\331\157\053\312\160\276\144\302\125\243\364\351\257\303\222 \051\334\210\026\044\231\074\215\046\230\266\133\267\314\316\267 \067\007\375\046\331\230\205\044\377\131\043\003\232\355\235\235 \250\344\136\070\316\327\122\015\157\322\077\155\261\005\153\111 \316\212\221\106\163\364\366\057\360\250\163\167\016\145\254\241 \215\146\122\151\176\113\150\014\307\036\067\047\203\245\214\307 \002\344\024\315\111\001\260\163\263\375\306\220\072\157\322\154 \336\100\017\370\174\025\367\242\316\074\327\136\023\214\201\027  $\label{eq:condition} $$ \030\027\321\275\361\167\020\072\324\145\071\301\047\254\127\054$ \045\124\377\242\332\117\212\141\071\136\256\075\112\214\275 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Certigna Root CA"
- # Issuer: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR
- # Serial Number:00:ca:e9:1b:89:f1:55:03:0d:a3:e6:41:6d:c4:e3:a6:e1
- # Subject: CN=Certigna Root CA,OU=0002 48146308100036,O=Dhimyotis,C=FR
- # Not Valid Before: Tue Oct 01 08:32:27 2013
- # Not Valid After: Sat Oct 01 08:32:27 2033
- # Fingerprint (SHA-256):

D4:8D:3D:23:EE:DB:50:A4:59:E5:51:97:60:1C:27:77:4B:9D:7B:18:C9:4D:5A:05:95:11:A1:02:50:B9:31:68

# Fingerprint (SHA1): 2D:0D:52:14:FF:9E:AD:99:24:01:74:20:47:6E:6C:85:27:27:F5:43

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certigna Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\055\015\122\024\377\236\255\231\044\001\164\040\107\156\154\205 \047\047\365\103

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \016\134\060\142\047\353\133\274\327\256\142\272\351\325\337\167$$ 

**END** 

CKA ISSUER MULTILINE OCTAL

\060\132\061\013\060\011\006\003\125\004\006\023\002\106\122\061 \022\060\020\006\003\125\004\012\014\011\104\150\151\155\171\157 \164\151\163\061\034\060\032\006\003\125\004\013\014\023\060\060

```
\060\062\040\064\070\061\064\066\063\060\070\061\060\060\063
\066\061\031\060\027\006\003\125\004\003\014\020\103\145\162\164
\151\147\156\141\040\122\157\157\164\040\103\101
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\021\000\312\351\033\211\361\125\003\015\243\346\101\155\304
\343\246\341
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "emSign Root CA - G1"
# Issuer: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Serial Number:31:f5:e4:62:0c:6c:58:ed:d6:d8
# Subject: CN=emSign Root CA - G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After: Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
40:F6:AF:03:46:A9:9A:A1:CD:1D:55:5A:4E:9C:CE:62:C7:F9:63:46:03:EE:40:66:15:83:3D:C8:C8:D0:03:67
# Fingerprint (SHA1): 8A:C7:AD:8F:73:AC:4E:C1:B5:75:4D:A5:40:F4:FC:CF:7C:B5:8E:8C
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "emSign Root CA - G1"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA_SUBJECT MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\061
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006
\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157
\164\040\103\101\040\055\040\107\061
```

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL \0002\012\061\365\344\142\014\154\130\355\326\330 END

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\224\060\202\002\174\240\003\002\001\002\002\012\061 \365\344\142\014\154\130\355\326\330\060\015\006\011\052\206\110 \206\367\015\001\001\013\005\000\060\147\061\013\060\011\006\003 \125\004\006\023\002\111\116\061\023\060\021\006\003\125\004\013 \023\012\145\155\123\151\147\156\040\120\113\111\061\045\060\043 \006\003\125\004\012\023\034\145\115\165\144\150\162\141\040\124 \145\143\150\156\157\154\157\147\151\145\163\040\114\151\155\151 \164\145\144\061\034\060\032\006\003\125\004\003\023\023\145\155  $\label{eq:condition} $$ \061\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060 $$$ \060\132\027\015\064\063\060\062\061\070\061\070\063\060\060 \132\060\147\061\013\060\011\006\003\125\004\006\023\002\111\116 \061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147 \156\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034 \147\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032 \006\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157  $\label{eq:condition} $$ \frac{157}{164}040\\103\\101\\040\\055\\040\\107\\061\\060\\202\\001\\042\\060\\015$ \006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\001 \017\000\060\202\001\012\002\202\001\001\000\223\113\273\351\146 \212\356\235\133\325\064\223\320\033\036\303\347\236\270\144\063 \177\143\170\150\264\315\056\161\165\327\233\040\306\115\051\274 \266\150\140\212\367\041\232\126\065\132\363\166\275\330\315\232 \377\223\126\113\245\131\006\241\223\064\051\335\026\064\165\116 \362\201\264\307\226\116\255\031\025\122\112\376\074\160\165\160 \315\257\053\253\025\232\063\074\252\263\213\252\315\103\375\365 \352\160\377\355\317\021\073\224\316\116\062\026\323\043\100\052 \167\263\257\074\001\054\154\355\231\054\213\331\116\151\230\262 \367\217\101\260\062\170\141\326\015\137\303\372\242\100\222\035 \134\027\346\160\076\065\347\242\267\302\142\342\253\244\070\114 \265\071\065\157\352\003\151\372\072\124\150\205\155\326\362\057 \103\125\036\221\015\016\330\325\152\244\226\321\023\074\054\170  $\label{eq:condition} $$120\350\072\222\322\027\126\345\065\032\100\034\076\215\054\355$$  $\label{eq:condition} $$ \071\337\102\340\203\101\164\337\243\315\302\206\140\110\150\343$ \151\013\124\000\213\344\166\151\041\015\171\116\064\010\136\024 \302\314\261\267\255\327\174\160\212\307\205\002\003\001\000\001 \243\102\060\100\060\035\006\003\125\035\016\004\026\004\024\373 \357\015\206\236\260\343\335\251\271\361\041\027\177\076\374\360 \167\053\032\060\016\006\003\125\035\017\001\001\377\004\004\003 \002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060 \003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001 \013\005\000\003\202\001\001\000\131\377\362\214\365\207\175\161 \075\243\237\033\133\321\332\370\323\234\153\066\275\233\251\141

 $\label{eq:control_loss} $$3336 \ 026 \ 054 \ 164 \ 075 \ 236 \ 346 \ 165 \ 332 \ 327 \ 272 \ 247 \ 274 \ 102 \ 027 \ 347 \ 075 \ 221 \ 353 \ 345 \ 175 \ 335 \ 076 \ 234 \ 361 \ 317 \ 222 \ 254 \ 154 \ 110 \ 314 \ 302 \ 042 \ 077 \ 151 \ 073 \ 305 \ 266 \ 025 \ 057 \ 243 \ 065 \ 306 \ 150 \ 052 \ 034 \ 127 \ 257 \ 071 \ 357 \ 215 \ 320 \ 065 \ 303 \ 030 \ 014 \ 173 \ 000 \ 126 \ 034 \ 315 \ 213 \ 031 \ 164 \ 336 \ 276 \ 017 \ 022 \ 340 \ 320 \ 252 \ 241 \ 077 \ 002 \ 064 \ 261 \ 160 \ 316 \ 235 \ 030 \ 326 \ 010 \ 003 \ 011 \ 106 \ 356 \ 140 \ 340 \ 176 \ 266 \ 304 \ 111 \ 004 \ 121 \ 175 \ 160 \ 140 \ 274 \ 252 \ 262 \ 377 \ 171 \ 162 \ 172 \ 246 \ 035 \ 075 \ 137 \ 052 \ 370 \ 312 \ 342 \ 375 \ 071 \ 267 \ 107 \ 271 \ 353 \ 176 \ 337 \ 004 \ 043 \ 257 \ 372 \ 234 \ 006 \ 007 \ 351 \ 373 \ 143 \ 223 \ 200 \ 100 \ 265 \ 306 \ 154 \ 012 \ 061 \ 050 \ 316 \ 014 \ 237 \ 317 \ 263 \ 043 \ 065 \ 200 \ 101 \ 215 \ 154 \ 304 \ 067 \ 173 \ 201 \ 057 \ 200 \ 241 \ 100 \ 102 \ 205 \ 351 \ 331 \ 070 \ 215 \ 350 \ 241 \ 123 \ 315 \ 001 \ 277 \ 151 \ 350 \ 132 \ 006 \ 362 \ 105 \ 013 \ 220 \ 372 \ 256 \ 341 \ 277 \ 235 \ 362 \ 256 \ 127 \ 074 \ 245 \ 256 \ 262 \ 126 \ 364 \ 213 \ 145 \ 100 \ 351 \ 375 \ 061 \ 201 \ 054 \ 364 \ 071 \ 011 \ 330 \ 356 \ 153 \ 247 \ 264 \ 246 \ 035 \ 025 \ 245 \ 230 \ 367 \ 001 \ 201 \ 330 \ 205 \ 175 \ 363 \ 121 \ 134 \ 161 \ 210 \ 336 \ 272 \ 314 \ 037 \ 200 \ 176 \ 112$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "emSign Root CA G1"
- # Issuer: CN=emSign Root CA G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
- # Serial Number:31:f5:e4:62:0c:6c:58:ed:d6:d8
- # Subject: CN=emSign Root CA G1,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
- # Not Valid Before: Sun Feb 18 18:30:00 2018
- # Not Valid After: Wed Feb 18 18:30:00 2043
- # Fingerprint (SHA-256):
- 40:F6:AF:03:46:A9:9A:A1:CD:1D:55:5A:4E:9C:CE:62:C7:F9:63:46:03:EE:40:66:15:83:3D:C8:C8:D0:03:67
- # Fingerprint (SHA1): 8A:C7:AD:8F:73:AC:4E:C1:B5:75:4D:A5:40:F4:FC:CF:7C:B5:8E:8C

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "emSign Root CA - G1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\212\307\255\217\163\254\116\301\265\165\115\245\100\364\374\317

 $\label{eq:condition} $$174\265\216\214$$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$\234\102\204\127\335\313\013\247\056\225\255\266\363\332\274\254$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{lem:condition} $$ \000147\061\013\060\011\006\003\125\004\006\023\002\111\116\061\023\060\021\006\003\125\004\012\145\155\123\151\147\156\040\112\113\111\061\045\060\043\006\003\125\004\012\023\034\145\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147\151\145\163\040\114\151\155\151\164\145\144\061\034\060\032\006\003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157$ 

```
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\012\061\365\344\142\014\154\130\355\326\330
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "emSign ECC Root CA - G3"
# Issuer: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Serial Number:3c:f6:07:a9:68:70:0e:da:8b:84
# Subject: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After: Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
86:A1:EC:BA:08:9C:4A:8D:3B:BE:27:34:C6:12:BA:34:1D:81:3E:04:3C:F9:E8:A8:62:CD:5C:57:A3:6B:BE:6B
# Fingerprint (SHA1): 30:43:FA:4F:F2:57:DC:A0:C3:80:EE:2E:58:EA:78:B2:3F:E6:BB:C1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "emSign ECC Root CA - G3"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA_SUBJECT MULTILINE_OCTAL
\060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\label{eq:condition} $$ \040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145 $$
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103
\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\label{eq:condition} $$ \060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061 $$
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\115\165\144\150\162\141\040\124\145\143\150\156\157\154\157\147
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103
\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
```

\002\012\074\366\007\251\150\160\016\332\213\204

\164\040\103\101\040\055\040\107\061

#### **END**

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\002\116\060\202\001\323\240\003\002\001\002\002\012\074$$$  $\label{eq:condition} $$ \366\007\251\150\160\016\332\213\204\060\012\006\010\052\206\110 $$$ \316\075\004\003\003\060\153\061\013\060\011\006\003\125\004\006 \023\002\111\116\061\023\060\021\006\003\125\004\013\023\012\145 \155\123\151\147\156\040\120\113\111\061\045\060\043\006\003\125 \004\012\023\034\145\115\165\144\150\162\141\040\124\145\143\150 \156\157\154\157\147\151\145\163\040\114\151\155\151\164\145\144 \061\040\060\036\006\003\125\004\003\023\027\145\155\123\151\147  $\label{eq:condition} $$ \frac{156}040\\105\\103\\103\\040\\122\\157\\157\\164\\040\\103\\101\\040\\055\\040$  $\label{eq:condition} $$ 107 \cdot 063 \cdot 060 \cdot 036 \cdot 027 \cdot 015 \cdot 061 \cdot 070 \cdot 060 \cdot 062 \cdot 061 \cdot 070 \cdot 061 \cdot 070 \cdot 063 \cdot 060 $$$ \060\060\132\027\015\064\063\060\062\061\070\061\070\063\060\060  $\label{eq:condition} $$ \060\132\060\153\061\013\060\011\006\003\125\004\006\023\002\111 $$$ \147\156\040\120\113\111\061\045\060\043\006\003\125\004\012\023  $\\ \\ 034\\ \\ 145\\ 115\\ 165\\ 144\\ 150\\ 162\\ 141\\ 040\\ 124\\ 145\\ 143\\ 150\\ 156\\ 157\\ 154$ \157\147\151\145\163\040\114\151\155\151\164\145\144\061\040\060 \036\006\003\125\004\003\023\027\145\155\123\151\147\156\040\105 \103\103\040\122\157\157\164\040\103\101\040\055\040\107\063\060 \166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201 \004\000\042\003\142\000\004\043\245\014\270\055\022\365\050\363 \261\262\335\342\002\022\200\236\071\137\111\115\237\311\045\064 \131\164\354\273\006\034\347\300\162\257\350\256\057\341\101\124 \207\024\250\112\262\350\174\202\346\133\152\265\334\263\165\316 \213\006\320\206\043\277\106\325\216\017\077\004\364\327\034\222 \176\366\245\143\302\365\137\216\056\117\241\030\031\002\053\062  $\label{eq:condition} $$ \020\144\175\026\223\321\243\102\060\100\060\035\006\003\125$$ \035\016\004\026\004\024\174\135\002\204\023\324\314\212\233\201 \316\027\034\056\051\036\234\110\143\102\060\016\006\003\125\035  $\label{eq:condition} $$ \017\001\001\377\004\004\003\002\001\006\060\017\006\003\125\035 $$$ \023\001\001\377\004\005\060\003\001\001\377\060\012\006\010\052 \206\110\316\075\004\003\003\003\151\000\060\146\002\061\000\276 \363\141\317\002\020\035\144\225\007\270\030\156\210\205\005\057 \203\010\027\220\312\037\212\114\350\015\033\172\261\255\325\201 \011\107\357\073\254\010\004\174\134\231\261\355\107\007\322\002 \061\000\235\272\125\374\251\112\350\355\355\346\166\001\102\173 \310\370\140\331\215\121\213\125\073\373\214\173\353\145\011\303 \370\226\315\107\250\202\362\026\125\167\044\176\022\020\225\004 \054\243

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "emSign ECC Root CA - G3"

<sup>#</sup> Issuer: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN

<sup>#</sup> Serial Number:3c:f6:07:a9:68:70:0e:da:8b:84

```
# Subject: CN=emSign ECC Root CA - G3,O=eMudhra Technologies Limited,OU=emSign PKI,C=IN
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After: Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
86:A1:EC:BA:08:9C:4A:8D:3B:BE:27:34:C6:12:BA:34:1D:81:3E:04:3C:F9:E8:A8:62:CD:5C:57:A3:6B:BE:6B
# Fingerprint (SHA1): 30:43:FA:4F:F2:57:DC:A0:C3:80:EE:2E:58:EA:78:B2:3F:E6:BB:C1
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "emSign ECC Root CA - G3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\060\103\372\117\362\127\334\240\303\200\356\056\130\352\170\262
\077\346\273\301
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\316\013\162\321\237\210\216\320\120\003\350\343\270\213\147\100
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\153\061\013\060\011\006\003\125\004\006\023\002\111\116\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\045\060\043\006\003\125\004\012\023\034\145
\151\145\163\040\114\151\155\151\164\145\144\061\040\060\036\006
\003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103
\040\122\157\157\164\040\103\101\040\055\040\107\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\label{eq:condition} $$ \002\012\074\366\007\251\150\160\016\332\213\204$
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "emSign Root CA - C1"
# Issuer: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US
# Serial Number:00:ae:cf:00:ba:c4:cf:32:f8:43:b2
# Subject: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After: Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
12:56:09:AA:30:1D:A0:A2:49:B9:7A:82:39:CB:6A:34:21:6F:44:DC:AC:9F:39:54:B1:42:92:F2:E8:C8:60:8F
# Fingerprint (SHA1): E7:2E:F1:DF:FC:B2:09:28:CF:5D:D4:D5:67:37:B1:51:CB:86:4F:01
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
```

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA LABEL UTF8 "emSign Root CA - C1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{lem:condition} $$ \000126\001\006\003\125\004\0006\023\002\125\123\061 $$ \023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156 $$ \040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145 $$ \115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003 $$ \125\004\003\023\145\155\123\151\147\156\040\122\157\157\164 $$ \040\103\101\040\055\040\103\061 $$$ 

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{lem:condition} $$ \000126\001\006\003\125\004\0006\023\002\125\123\061 $$ \023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156 $$ \040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145 $$ \115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003 $$ \125\004\003\023\023\145\155\123\151\147\156\040\122\157\157\164 $$ \040\103\101\040\055\040\103\061 $$$ 

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

 $\label{eq:condition} $$ \002\013\000\256\317\000\272\304\317\062\370\103\262 $$$ 

**END** 

#### CKA\_VALUE MULTILINE\_OCTAL

\060\202\003\163\060\202\002\133\240\003\002\001\002\002\013\000 \256\317\000\272\304\317\062\370\103\262\060\015\006\011\052\206 \110\206\367\015\001\001\013\005\000\060\126\061\013\060\011\006 \003\125\004\006\023\002\125\123\061\023\060\021\006\003\125\004 \013\023\012\145\155\123\151\147\156\040\120\113\111\061\024\060  $\label{eq:condition} $$ \022\006\003\125\004\012\023\013\145\115\165\144\150\162\141\040 $$$ \111\156\143\061\034\060\032\006\003\125\004\003\023\023\145\155 \123\151\147\156\040\122\157\157\164\040\103\101\040\055\040\103 \061\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060 \060\132\027\015\064\063\060\062\061\070\061\070\063\060\060 \132\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123 \061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147  $\label{thm:local_equation} $$ 156\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013$ \145\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006  $\label{eq:condition} $$ \003\125\004\003\023\023\145\155\123\151\147\156\040\122\157\157$ \164\040\103\101\040\055\040\103\061\060\202\001\042\060\015\006 \011\052\206\110\206\367\015\001\001\001\005\000\003\202\001\017 \000\060\202\001\012\002\202\001\001\000\317\353\251\271\361\231 \005\314\330\050\041\112\363\163\064\121\204\126\020\365\240\117 \054\022\343\372\023\232\047\320\317\371\171\032\164\137\035\171 \071\374\133\370\160\216\340\222\122\367\344\045\371\124\203\331 \035\323\310\132\205\077\136\307\266\007\356\076\300\316\232\257 \254\126\102\052\071\045\160\326\277\265\173\066\255\254\366\163

\334\315\327\035\212\203\245\373\053\220\025\067\153\034\046\107 \334\073\051\126\223\152\263\301\152\072\235\075\365\301\227\070 \130\005\213\034\021\343\344\264\270\135\205\035\203\376\170\137  $\label{eq:condition} $$ \013\105\150\030\110\245\106\163\064\073\376\017\310\166\273\307 $$$  $\label{eq:condition} $$ \030\363\005\321\206\363\205\355\347\271\331\062\255\125\210\316$ \246\266\221\260\117\254\176\025\043\226\366\077\360\040\064\026 \336\012\306\304\004\105\171\177\247\375\276\322\251\245\257\234 \305\043\052\367\074\041\154\275\257\217\116\305\072\262\363\064 \022\374\337\200\032\111\244\324\251\225\367\236\211\136\242\211 \254\224\313\250\150\233\257\212\145\047\315\211\356\335\214\265  $\label{eq:condition} $$ \frac{153}051\\160\\103\\240\\151\\013\\344\\271\\017\\002\\003\\001\\000\\001\\243$  $\label{eq:condition} $$ 102\060\100\060\035\006\003\125\035\016\004\026\004\024\376\241 $$$ \340\160\036\052\003\071\122\132\102\276\134\221\205\172\030\252 \115\265\060\016\006\003\125\035\017\001\001\377\004\004\003\002  $\label{eq:condition} $$ \001\006\000\17\006\003\125\035\023\001\001\377\004\005\060\003\$ \001\001\377\060\015\006\011\052\206\110\206\367\015\001\001\013  $\label{eq:condition} $$ \005\000\003\202\001\000\302\112\126\372\025\041\173\050\242 $$$ \351\345\035\373\370\055\304\071\226\101\114\073\047\054\304\154 \030\025\200\306\254\257\107\131\057\046\013\343\066\260\357\073 \376\103\227\111\062\231\022\025\133\337\021\051\377\253\123\370 \273\301\170\017\254\234\123\257\127\275\150\214\075\151\063\360  $\label{eq:condition} $\243\240\043\143\073\144\147\042\104\255\325\161\313\126\052\170$$ \222\243\117\022\061\066\066\342\336\376\000\304\243\140\017\047 \255\240\260\212\265\066\172\122\241\275\047\364\040\047\142\350 \115\224\044\023\344\012\004\351\074\253\056\310\103\011\112\306 \141\004\345\111\064\176\323\304\310\365\017\300\252\351\272\124 \136\363\143\053\117\117\120\324\376\271\173\231\214\075\300\056 \274\002\053\323\304\100\344\212\007\061\036\233\316\046\231\023 \373\021\352\232\042\014\021\031\307\136\033\201\120\060\310\226 \022\156\347\313\101\177\221\073\242\107\267\124\200\033\334\000 \314\232\220\352\303\303\120\006\142\014\060\300\025\110\247\250  $\label{eq:condition} $$ \frac{131}174\sqrt{341}\sqrt{256}\sqrt{42}\sqrt{342}\sqrt{12}\sqrt{172}\sqrt{17}\sqrt{372}\sqrt{142}\sqrt{253}\sqrt{122}\sqrt{144}\sqrt{341}\sqrt{131}\sqrt{134}\sqrt{134}\sqrt{1341}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}\sqrt{1344}$ \361\337\312\276\203\015\102

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "emSign Root CA - C1"
```

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

<sup>#</sup> Issuer: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

<sup>#</sup> Serial Number:00:ae:cf:00:ba:c4:cf:32:f8:43:b2

<sup>#</sup> Subject: CN=emSign Root CA - C1,O=eMudhra Inc,OU=emSign PKI,C=US

<sup>#</sup> Not Valid Before: Sun Feb 18 18:30:00 2018

<sup>#</sup> Not Valid After: Wed Feb 18 18:30:00 2043

<sup>#</sup> Fingerprint (SHA-256):

<sup>12:56:09:</sup>AA:30:1D:A0:A2:49:B9:7A:82:39:CB:6A:34:21:6F:44:DC:AC:9F:39:54:B1:42:92:F2:E8:C8:60:8F

<sup>#</sup> Fingerprint (SHA1): E7:2E:F1:DF:FC:B2:09:28:CF:5D:D4:D5:67:37:B1:51:CB:86:4F:01

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign Root CA - C1"
CKA CERT SHA1 HASH MULTILINE OCTAL
\347\056\361\337\374\262\011\050\317\135\324\325\147\067\261\121
\313\206\117\001
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\330\343\135\001\041\372\170\132\260\337\272\322\356\052\137\150
END
CKA_ISSUER MULTILINE_OCTAL
\060\126\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\label{eq:condition} $$ \023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\label{eq:condition} $$ \040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145$
\115\165\144\150\162\141\040\111\156\143\061\034\060\032\006\003
\040\103\101\040\055\040\103\061
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\013\000\256\317\000\272\304\317\062\370\103\262
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "emSign ECC Root CA - C3"
# Issuer: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
# Serial Number:7b:71:b6:82:56:b8:12:7c:9c:a8
# Subject: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US
# Not Valid Before: Sun Feb 18 18:30:00 2018
# Not Valid After: Wed Feb 18 18:30:00 2043
# Fingerprint (SHA-256):
BC:4D:80:9B:15:18:9D:78:DB:3E:1D:8C:F4:F9:72:6A:79:5D:A1:64:3C:A5:F1:35:8E:1D:DB:0E:DC:0D:7E:B3
# Fingerprint (SHA1): B6:AF:43:C2:9B:81:53:7D:F6:EF:6B:C3:1F:1F:60:15:0C:EE:48:66
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "emSign ECC Root CA - C3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156
\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145
```

CKA\_TOKEN CK\_BBOOL CK\_TRUE
CKA PRIVATE CK BBOOL CK FALSE

\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003 \125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040 \122\157\157\164\040\103\101\040\055\040\103\063

END

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\132\001\006\003\125\004\0006\023\002\125\123\061\023\000\21\006\003\125\004\013\155\123\151\147\156\040\120\23\013\145\115\165\144\150\162\141\040\111\156\143\061\040\060\036\0006\003\125\0004\003\023\027\145\155\123\151\147\156\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040\103\063$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\012\173\161\266\202\126\270\022\174\234\250$$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\053\060\202\001\261\240\003\002\001\002\002\012\173 \161\266\202\126\270\022\174\234\250\060\012\006\010\052\206\110 \316\075\004\003\003\060\132\061\013\060\011\006\003\125\004\006 \023\002\125\123\061\023\060\021\006\003\125\004\013\023\012\145 \155\123\151\147\156\040\120\113\111\061\024\060\022\006\003\125 \040\060\036\006\003\125\004\003\023\027\145\155\123\151\147\156 \040\105\103\103\040\122\157\157\164\040\103\101\040\055\040\103 \063\060\036\027\015\061\070\060\062\061\070\061\070\063\060\060 \060\132\027\015\064\063\060\062\061\070\061\070\063\060\060\060 \132\060\132\061\013\060\011\006\003\125\004\006\023\002\125\123 \061\023\060\021\006\003\125\004\013\023\012\145\155\123\151\147 \156\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013 \145\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006 \003\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103 \040\122\157\157\164\040\103\101\040\055\040\103\063\060\166\060 \020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000 \042\003\142\000\004\375\245\141\256\173\046\020\035\351\267\042 \060\256\006\364\201\263\261\102\161\225\071\274\323\122\343\257 \257\371\362\227\065\222\066\106\016\207\225\215\271\071\132\351  $\label{eq:condition} $$ \273\337\320\376\310\007\101\074\273\125\157\203\243\152\373\142 $$$ \260\201\211\002\160\175\110\305\112\343\351\042\124\042\115\223 \273\102\014\257\167\234\043\246\175\327\141\021\316\145\307\370 \177\376\365\362\251\243\102\060\100\060\035\006\003\125\035\016 \004\026\004\024\373\132\110\320\200\040\100\362\250\351\000\007 \151\031\167\247\346\303\364\317\060\016\006\003\125\035\017\001 \001\377\004\004\003\002\001\006\060\017\006\003\125\035\023\001 \001\377\004\005\060\003\001\001\377\060\012\006\010\052\206\110 \316\075\004\003\003\003\150\000\060\145\002\061\000\264\330\057 \002\211\375\266\114\142\272\103\116\023\204\162\265\256\335\034 \336\326\265\334\126\217\130\100\132\055\336\040\114\042\203\312 \223\250\176\356\022\100\307\326\207\117\370\337\205\002\060\034 \024\144\344\174\226\203\021\234\260\321\132\141\113\246\017\111 \323\000\374\241\374\344\245\377\177\255\327\060\320\307\167\177 \276\201\007\125\060\120\040\024\365\127\070\012\250\061\121 END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "emSign ECC Root CA - C3"

# Issuer: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US

# Serial Number:7b:71:b6:82:56:b8:12:7c:9c:a8

# Subject: CN=emSign ECC Root CA - C3,O=eMudhra Inc,OU=emSign PKI,C=US

# Not Valid Before: Sun Feb 18 18:30:00 2018

# Not Valid After: Wed Feb 18 18:30:00 2043

# Fingerprint (SHA-256):

BC:4D:80:9B:15:18:9D:78:DB:3E:1D:8C:F4:F9:72:6A:79:5D:A1:64:3C:A5:F1:35:8E:1D:DB:0E:DC:0D:7E:B3

# Fingerprint (SHA1): B6:AF:43:C2:9B:81:53:7D:F6:EF:6B:C3:1F:1F:60:15:0C:EE:48:66

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "emSign ECC Root CA - C3"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\266\257\103\302\233\201\123\175\366\357\153\303\037\037\140\025

\014\356\110\146

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\076\123\263\243\201\356\327\020\370\323\260\035\027\222\365\325

END

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\132\061\013\060\011\006\003\125\004\006\023\002\125\123\061\$ 

 $\label{eq:condition} $$ \023\060\021\006\003\125\004\013\023\012\145\155\123\151\147\156$ 

\040\120\113\111\061\024\060\022\006\003\125\004\012\023\013\145

\115\165\144\150\162\141\040\111\156\143\061\040\060\036\006\003

\125\004\003\023\027\145\155\123\151\147\156\040\105\103\103\040

\122\157\157\164\040\103\101\040\055\040\103\063

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\012\173\161\266\202\126\270\022\174\234\250$$ 

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

 ${\tt CKA\_TRUST\_STEP\_UP\_APPROVED\ CK\_BBOOL\ CK\_FALSE}$ 

#

# Certificate "Hongkong Post Root CA 3"

- # Issuer: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
- # Serial Number:08:16:5f:8a:4c:a5:ec:00:c9:93:40:df:c4:c6:ae:23:b8:1c:5a:a4
- # Subject: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK
- # Not Valid Before: Sat Jun 03 02:29:46 2017
- # Not Valid After: Tue Jun 03 02:29:46 2042
- # Fingerprint (SHA-256):
- 5A:2F:C0:3F:0C:83:B0:90:BB:FA:40:60:4B:09:88:44:6C:76:36:18:3D:F9:84:6E:17:10:1A:44:7F:B8:EF:D6
- # Fingerprint (SHA1): 58:A2:D0:EC:20:52:81:5B:C1:F3:F8:64:02:24:4E:C2:8E:02:4B:02
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA MODIFIABLE CK BBOOL CK FALSE
- CKA\_LABEL UTF8 "Hongkong Post Root CA 3"
- CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509
- CKA\_SUBJECT MULTILINE\_OCTAL
- \060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
- \022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113
- \157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157
- $\label{eq:condition} $$ \frac{156}147 \cdot 040 \cdot 113 \cdot 157 \cdot 156 \cdot 147 \cdot 061 \cdot 026 \cdot 060 \cdot 024 \cdot 006 \cdot 003 \cdot 125 \cdot 004 \cdot 012 }{125} $$$
- \023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061
- $\\ \langle 040 \rangle 060 \rangle 036 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 003 \rangle 023 \rangle 027 \rangle 110 \rangle 157 \rangle 156 \rangle 147 \rangle 153 \rangle 157 \rangle 156 \rangle 167 \rangle$
- $\label{eq:condition} $$ \frac{156\147\040\120\157\164\040\122\157\157\164\040\103\101\040}{101\040\122\157\157\164\040\103\101\040}$

\063 END

CKA ID UTF8 "0"

#### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000157\061\013\060\011\006\003\125\004\000\023\002\110\113\061\022\060\020\006\003\125\004\0007\023\011\110\157\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012\023\015\110\157\156\147\153\157\156\147\040\120\157\156\147\153\157\156\147\040\120\157\156\147\153\157\156\147\040\120\157\156\147\153\157\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040\063$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\010\026\137\212\114\245\354\000\311\223\100\337\304\306\256\043\270\034\132\244

**END** 

#### CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\200\317\060\202\003\267\240\003\002\001\002\002\002\4\010\006\137\212\114\245\354\000\311\223\100\337\304\306\256\043\270\034\132\244\060\015\006\011\052\206\110\206\367\015\001\001\011\1005\000\006\0157\061\013\060\011\006\003\125\0004\006\023\002\110\113\061\022\060\020\006\003\125\0004\0003\125\0004\0007\023\011\110\157\156\147\061\022\060\020\006\003\125\0004\0007\023\011\110\157\156\147\040\113\157\156\147\061\026\060\024\006\003\125$ 

\004\012\023\015\110\157\156\147\153\157\156\147\040\120\157\163 \164\061\040\060\036\006\003\125\004\003\023\027\110\157\156\147 \153\157\156\147\040\120\157\163\164\040\122\157\157\164\040\103 \101\040\063\060\036\027\015\061\067\060\066\060\063\060\062\062 \071\064\066\132\027\015\064\062\060\066\060\063\060\062\062\071  $\label{eq:condition} $$ \064\06\132\060\157\061\013\060\011\006\003\125\004\006\023\002$ \110\113\061\022\060\020\006\003\125\004\010\023\011\110\157\156 \147\040\113\157\156\147\061\022\060\020\006\003\125\004\007\023  $\label{eq:condition} $$ \011\10\157\156\147\040\113\157\156\147\061\026\060\024\006\003 $$$ \125\004\012\023\015\110\157\156\147\153\157\156\147\040\120\157  $\label{eq:condition} $$ 163\164\061\040\060\036\006\003\125\004\003\023\027\110\157\156$$  $\label{eq:condition} $$ \frac{147}153\\157\\156\\147\\040\\120\\157\\163\\164\\040\\122\\157\\157\\164\\040$ \103\101\040\063\060\202\002\042\060\015\006\011\052\206\110\206 \367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012  $\label{eq:condition} $$ \002\202\001\000\263\210\327\352\316\017\040\116\276\346\326 $$$ \003\155\356\131\374\302\127\337\051\150\241\203\016\076\150\307 \150\130\234\034\140\113\211\103\014\271\324\025\262\356\301\116 \165\351\265\247\357\345\351\065\231\344\314\034\347\113\137\215 \063\060\040\063\123\331\246\273\325\076\023\216\351\037\207\111  $\label{eq:condition} $$ \255\120\055\120\312\030\276\001\130\242\023\160\226\273\211\210$ \126\200\134\370\275\054\074\341\114\127\210\273\323\271\225\357 \313\307\366\332\061\164\050\246\346\124\211\365\101\061\312\345  $\\ \langle 046 \rangle 032 \rangle 315 \rangle 202 \rangle 340 \rangle 160 \rangle 332 \rangle 073 \rangle 051 \rangle 273 \rangle 325 \rangle 003 \rangle 365 \rangle 231 \rangle 272 \rangle 125$ \365\144\321\140\016\263\211\111\270\212\057\005\322\204\105\050 \174\217\150\120\022\170\374\013\265\123\313\302\230\034\204\243 \236\260\276\043\244\332\334\310\053\036\332\156\105\036\211\230 \332\371\000\056\006\351\014\073\160\325\120\045\210\231\313\315  $\label{eq:condition} $$ 163\140\367\325\377\065\147\305\241\274\136\253\315\112\270\105$ \353\310\150\036\015\015\024\106\022\343\322\144\142\212\102\230 \274\264\306\010\010\370\375\250\114\144\234\166\001\275\057\251 \006\312\345\172\106\145\351\302\326\120\101\056\077\267\344\355 \154\327\277\046\001\021\242\026\051\112\153\064\006\220\354\023 \322\266\373\152\166\322\074\355\360\326\055\335\341\025\354\243 \233\057\054\311\076\053\344\151\073\377\162\045\261\066\206\133 \307\177\153\213\125\033\112\305\040\141\075\256\313\120\341\010 \072\276\260\217\143\101\123\060\010\131\074\230\035\167\272\143 \221\172\312\020\120\140\277\360\327\274\225\207\217\227\305\376  $\verb|\|227|152|001|224|243|174|133|205|035|052|071|072|320|124|241|321|$ \071\161\235\375\041\371\265\173\360\342\340\002\217\156\226\044 \045\054\240\036\054\250\304\211\247\357\355\231\006\057\266\012 \114\117\333\242\314\067\032\257\107\205\055\212\137\304\064\064 \114\000\375\030\223\147\023\321\067\346\110\264\213\006\305\127 \173\031\206\012\171\313\000\311\122\257\102\377\067\217\341\243  $\label{eq:condition} $$ \036\172\075\120\253\143\006\347\025\265\077\266\105\067\224\067$ \261\176\362\110\303\177\305\165\376\227\215\105\217\032\247\032 \162\050\032\100\017\002\003\001\000\001\243\143\060\141\060\017  $\label{eq:condition} $$ \006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060 $$$ 

\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060 \037\006\003\125\035\043\004\030\060\026\200\024\027\235\315\036 \213\326\071\053\160\323\134\324\240\270\037\260\000\374\305\141  $\label{eq:condition} $$ \000\03\125\035\016\004\026\004\024\027\235\315\036\213$  $\label{eq:condition} $\326\071\053\160\323\134\324\240\270\037\260\000\374\305\141\060$$ \015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202 \002\001\000\126\325\173\156\346\042\001\322\102\233\030\325\016 \327\146\043\134\343\376\240\307\222\322\351\224\255\113\242\306 \354\022\174\164\325\110\322\131\024\231\300\353\271\321\353\364 \110\060\133\255\247\127\163\231\251\323\345\267\321\056\131\044 \130\334\150\056\056\142\330\152\344\160\013\055\040\120\040\244  $\label{eq:condition} $$ \062\225\321\000\230\273\323\375\367\062\362\111\256\306\172\340 $$$ \107\276\156\316\313\243\162\072\055\151\135\313\310\350\105\071 \324\372\102\301\021\114\167\135\222\373\152\377\130\104\345\353 \201\236\257\240\231\255\276\251\001\146\313\070\035\074\337\103 \037\364\115\156\264\272\027\106\374\175\375\207\201\171\152\015  $\label{eq:condition} $$ \063\017\372\057\370\024\271\200\263\135\115\252\227\341\371\344 $$$ \030\305\370\325\070\214\046\074\375\362\050\342\356\132\111\210 \054\337\171\075\216\236\220\074\275\101\112\072\335\133\366\232  $\label{eq:condition} $$ \264\316\077\045\060\177\062\175\242\003\224\320\334\172\241\122 $$$ \336\156\223\215\030\046\375\125\254\275\217\233\322\317\257\347  $\label{eq:condition} $$ \206\054\313\037\011\157\243\157\251\204\324\163\277\115\241\164$  $\label{eq:condition} $$ \033\116\043\140\362\314\016\252\177\244\234\114\045\250\262\146$$ \073\070\377\331\224\060\366\162\204\276\150\125\020\017\306\163  $\label{eq:condition} $$ \054\026\151\223\007\376\261\105\355\273\242\125\152\260\332\265$$ \112\002\045\047\205\327\267\267\206\104\026\211\154\200\053\076 \227\251\234\325\176\125\114\306\336\105\020\034\352\351\073\237  $\label{eq:condition} $$ \003\123\356\356\172\001\002\026\170\324\350\302\276\106\166\210 $$$ \023\077\042\273\110\022\035\122\000\264\002\176\041\032\036\234 \045\364\363\075\136\036\322\034\371\263\055\266\367\067\134\306  $\label{eq:condition} $$ \frac{313}041\\116\\260\\367\\231\\107\\030\\205\\301\\053\\272\\125\\256\\006\\352$ \320\007\262\334\253\320\202\226\165\316\322\120\376\231\347\317 \057\237\347\166\321\141\052\373\041\273\061\320\252\237\107\244 \262\042\312\026\072\120\127\304\133\103\147\305\145\142\003\111  $\label{eq:condition} $$ \01\353\103\331\330\370\236\255\317\261\143\016\105\364\240\132$ \054\233\055\305\246\300\255\250\107\364\047\114\070\015\056\033 \111\073\122\364\350\210\203\053\124\050\324\362\065\122\264\062  $\label{eq:condition} $$ \203\142\151\144\014\221\234\237\227\352\164\026\375\037\021\006$ \232\233\364

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Hongkong Post Root CA 3"

<sup>#</sup> Issuer: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK

<sup>#</sup> Serial Number:08:16:5f:8a:4c:a5:ec:00:c9:93:40:df:c4:c6:ae:23:b8:1c:5a:a4

<sup>#</sup> Subject: CN=Hongkong Post Root CA 3,O=Hongkong Post,L=Hong Kong,ST=Hong Kong,C=HK

```
# Not Valid After: Tue Jun 03 02:29:46 2042
# Fingerprint (SHA-256):
5A:2F:C0:3F:0C:83:B0:90:BB:FA:40:60:4B:09:88:44:6C:76:36:18:3D:F9:84:6E:17:10:1A:44:7F:B8:EF:D6
# Fingerprint (SHA1): 58:A2:D0:EC:20:52:81:5B:C1:F3:F8:64:02:24:4E:C2:8E:02:4B:02
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Hongkong Post Root CA 3"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\130\242\320\354\040\122\201\133\301\363\370\144\002\044\116\302
\216\002\113\002
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\021\374\237\275\163\060\002\212\375\077\363\130\271\313\040\360
END
CKA ISSUER MULTILINE OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\110\113\061
\label{eq:condition} $$ \022\060\020\006\003\125\004\010\023\011\110\157\156\147\040\113 
\157\156\147\061\022\060\020\006\003\125\004\007\023\011\110\157
\156\147\040\113\157\156\147\061\026\060\024\006\003\125\004\012
\label{eq:condition} $$ \023\015\110\157\156\147\153\157\156\147\040\120\157\163\164\061
\040\060\036\006\003\125\004\003\023\027\110\157\156\147\153\157
\156\147\040\120\157\163\164\040\122\157\157\164\040\103\101\040
\063
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\label{eq:condition} $$ \002\024\010\026\137\212\114\245\354\000\311\223\100\337\304\306 $$
\256\043\270\034\132\244
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Entrust Root Certification Authority - G4"
# Issuer: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Serial Number:00:d9:b5:43:7f:af:a9:39:0f:00:00:00:00:55:65:ad:58
# Subject: CN=Entrust Root Certification Authority - G4,OU="(c) 2015 Entrust, Inc. - for authorized use
only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
# Not Valid Before: Wed May 27 11:11:16 2015
# Not Valid After: Sun Dec 27 11:41:16 2037
# Fingerprint (SHA-256):
DB:35:17:D1:F6:73:2A:2D:5A:B9:7C:53:3E:C7:07:79:EE:32:70:A6:2F:B4:AC:42:38:37:24:60:E6:F0:1E:88
```

# Not Valid Before: Sat Jun 03 02:29:46 2017

# Fingerprint (SHA1): 14:88:4E:86:26:37:B0:26:AF:59:62:5C:40:77:EC:35:29:BA:96:01

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Entrust Root Certification Authority - G4"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_co$ 

**END** 

CKA\_ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_co$ 

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\021\000\331\265\103\177\257\251\071\017\000\000\000\000\125\145\255\130$ 

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:cond_cond_cond} $$ \000\200\001\1002\002\002\1000 $$ \331\265\103\177\257\251\071\017\000\000\000\000\125\145\255\130 $$ \060\015\006\011\052\206\110\206\367\015\001\001\013\1005\000\060 $$ \201\276\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$ \026\060\024\006\003\125\004\012\023\015\105\156\164\162\165\163 $$$ 

\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004\013 \023\037\123\145\145\040\167\167\167\056\145\156\164\162\165\163 \164\056\156\145\164\057\154\145\147\141\154\055\164\145\162\155 \163\061\071\060\067\006\003\125\004\013\023\060\050\143\051\040 \062\060\061\065\040\105\156\164\162\165\163\164\054\040\111\156 \172\145\144\040\165\163\145\040\157\156\154\171\061\062\060\060 \006\003\125\004\003\023\051\105\156\164\162\165\163\164\040\122 \156\040\101\165\164\150\157\162\151\164\171\040\055\040\107\064 \060\036\027\015\061\065\060\065\062\067\061\061\061\061\066 \132\027\015\063\067\061\062\062\067\061\061\064\061\066\132 \060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123 \163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004 \013\023\037\123\145\145\040\167\167\167\056\145\156\164\162\165 \163\164\056\156\145\164\057\154\145\147\141\154\055\164\145\162 \155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051 \040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111  $\label{eq:condition} $$ \frac{156}{143}056040055040146157162040141165164150157162}$$ \151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060 \060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040 \157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107 \064\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001 \001\001\005\000\003\202\002\017\000\060\202\002\012\002\202\002 \001\000\261\354\054\102\356\342\321\060\377\245\222\107\342\055 \303\272\144\227\155\312\367\015\265\131\301\263\313\250\150\031 \330\257\204\155\060\160\135\176\363\056\322\123\231\341\376\037 \136\331\110\257\135\023\215\333\377\143\063\115\323\000\002\274 \304\370\321\006\010\224\171\130\212\025\336\051\263\375\375\304 \117\350\252\342\240\073\171\315\277\153\103\062\335\331\164\020 \271\367\364\150\324\273\320\207\325\252\113\212\052\157\052\004 \265\262\246\307\240\172\346\110\253\322\321\131\314\326\176\043 \346\227\154\360\102\345\334\121\113\025\101\355\111\112\311\336 \020\227\326\166\301\357\245\265\066\024\227\065\330\170\042\065 \122\357\103\275\333\047\333\141\126\202\064\334\313\210\140\014  $\label{eq:condition} $$ \031\32\345\054\001\306\124\257\327\252\301\020\173\322\005\132$ \270\100\236\206\247\303\220\206\002\126\122\011\172\234\322\047 \202\123\112\145\122\152\365\074\347\250\362\234\257\213\275\323 \016\324\324\136\156\207\236\152\075\105\035\321\135\033\364\351 \012\254\140\231\373\211\264\377\230\054\317\174\035\351\002\252 \004\232\036\270\334\210\156\045\263\154\146\367\074\220\363\127 \301\263\057\365\155\362\373\312\241\370\051\235\106\213\263\152 \366\346\147\007\276\054\147\012\052\037\132\262\076\127\304\323 \041\041\143\145\122\221\033\261\231\216\171\176\346\353\215\000 \331\132\252\352\163\350\244\202\002\107\226\376\133\216\124\141 \243\353\057\113\060\260\213\043\165\162\174\041\074\310\366\361

\164\324\034\173\243\005\125\356\273\115\073\062\276\232\167\146 \236\254\151\220\042\007\037\141\072\226\276\345\232\117\314\005 \074\050\131\323\301\014\124\250\131\141\275\310\162\114\350\334 \237\207\177\275\234\110\066\136\225\243\016\271\070\044\125\374 \165\146\353\002\343\010\064\051\112\306\343\053\057\063\240\332 \243\206\245\022\227\375\200\053\332\024\102\343\222\275\076\362 \135\136\147\164\056\034\210\107\051\064\137\342\062\250\234\045 \067\214\272\230\000\227\213\111\226\036\375\045\212\254\334\332 \330\135\164\156\146\260\377\104\337\241\030\306\276\110\057\067 \224\170\370\225\112\077\177\023\136\135\131\375\164\206\103\143 \163\111\002\003\001\000\001\243\102\060\100\060\017\006\003\125  $\label{eq:condition} $$ \035\023\001\001\377\004\005\060\003\001\001\377\060\016\006\003$ \125\035\017\001\001\377\004\004\003\002\001\006\060\035\006\003 \125\035\016\004\026\004\024\237\070\304\126\043\303\071\350\240  $\label{eq:condition} $$ 161\154\350\124\114\344\350\072\261\277\147\060\015\006\011\052$$ \206\110\206\367\015\001\001\013\005\000\003\202\002\001\000\022 \345\102\246\173\213\017\014\344\106\245\266\140\100\207\214\045 \176\255\270\150\056\133\306\100\166\074\003\370\311\131\364\363 \253\142\316\020\215\264\132\144\214\150\300\260\162\103\064\322  $\label{eq:condition} $$ \033\013\366\054\123\322\312\220\113\206\146\374\252\203\042\364$ \213\032\157\046\110\254\166\167\010\277\305\230\134\364\046\211 \236\173\303\271\144\062\001\177\323\303\335\130\155\354\261\253  $\label{eq:condition} $$ \204\125\164\167\204\004\047\122\153\206\114\316\335\271\145\377 $$$ \326\306\136\237\232\020\231\113\165\152\376\152\351\227\040\344 \344\166\172\306\320\044\252\220\315\040\220\272\107\144\373\177  $\label{eq:condition} $$ \07\263\123\170\265\012\142\362\163\103\316\101\053\201\152\056$$ \205\026\224\123\324\153\137\162\042\253\121\055\102\325\000\234  $\verb|231|277|336|273|224|073|127|375|232|365|206|313|126|073|133|210|$ \001\345\174\050\113\003\371\111\203\174\262\177\174\343\355\216 \241\177\140\123\216\125\235\120\064\022\017\267\227\173\154\207  $\label{eq:condition} $$ \frac{112\\104\\347\\365\\155\\354\\200\\067\\360\\130\\031\\156\\112\\150\\166\\360$ \037\222\344\352\265\222\323\141\121\020\013\255\247\331\137\307 \137\334\037\243\134\214\241\176\233\267\236\323\126\157\146\136 \007\226\040\355\013\164\373\146\116\213\021\025\351\201\111\176 \157\260\324\120\177\042\327\137\145\002\015\246\364\205\036\330 \256\006\113\112\247\322\061\146\302\370\316\345\010\246\244\002 \226\104\150\127\304\325\063\317\031\057\024\304\224\034\173\244 \331\360\237\016\261\200\342\321\236\021\144\251\210\021\072\166 \202\345\142\302\200\330\244\203\355\223\357\174\057\220\260\062 \114\226\025\150\110\122\324\231\010\300\044\350\034\343\263\245 \041\016\222\300\220\037\317\040\137\312\073\070\307\267\155\072 \363\346\104\270\016\061\153\210\216\160\353\234\027\122\250\101 \224\056\207\266\347\246\022\305\165\337\133\300\012\156\173\244 \344\136\206\371\066\224\337\167\303\351\015\300\071\361\171\273 \106\216\253\103\131\047\267\040\273\043\351\126\100\041\354\061 \075\145\252\103\362\075\337\160\104\341\272\115\046\020\073\230 \237\363\310\216\033\070\126\041\152\121\223\323\221\312\106\332 \211\267\075\123\203\054\010\037\213\217\123\335\377\254\037

### CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE

- # Trust for "Entrust Root Certification Authority G4"
- $\# \ Issuer: \ CN=Entrust \ Root \ Certification \ Authority G4, OU="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ use \ Authorized \ U="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ U="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ U="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ U="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ U="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ U="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ U="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ U="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ U="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ U="(c)\ 2015 \ Entrust, \ Inc.\ \ for \ authorized \ U="(c)\ 2015 \ Entrust, \ U$
- $only", OU=See\ www.entrust.net/legal-terms, O="Entrust, Inc.", C=US$
- # Serial Number:00:d9:b5:43:7f:af:a9:39:0f:00:00:00:00:55:65:ad:58
- # Subject: CN=Entrust Root Certification Authority G4,OU="(c) 2015 Entrust, Inc. for authorized use only",OU=See www.entrust.net/legal-terms,O="Entrust, Inc.",C=US
- # Not Valid Before: Wed May 27 11:11:16 2015
- # Not Valid After: Sun Dec 27 11:41:16 2037
- # Fingerprint (SHA-256):
- DB:35:17:D1:F6:73:2A:2D:5A:B9:7C:53:3E:C7:07:79:EE:32:70:A6:2F:B4:AC:42:38:37:24:60:E6:F0:1E:88
- # Fingerprint (SHA1): 14:88:4E:86:26:37:B0:26:AF:59:62:5C:40:77:EC:35:29:BA:96:01
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "Entrust Root Certification Authority G4"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL
- \024\210\116\206\046\067\260\046\257\131\142\134\100\167\354\065
- \051\272\226\001

**END** 

### CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\211\123\361\203\043\267\174\216\005\361\214\161\070\116\037\210

**END** 

#### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \060\201\276\061\013\060\011\006\003\125\004\006\023\002\125\123$$ 

\061\026\060\024\006\003\125\004\012\023\015\105\156\164\162\165

\163\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004

 $\label{eq:condition} $$ \03^{023}\037\123\145\145\040\167\167\167\056\145\156\164\162\165$$ 

\155\163\061\071\060\067\006\003\125\004\013\023\060\050\143\051

\040\062\060\061\065\040\105\156\164\162\165\163\164\054\040\111 \156\143\056\040\055\040\146\157\162\040\141\165\164\150\157\162

\151\172\145\144\040\165\163\145\040\157\156\154\171\061\062\060

\060\006\003\125\004\003\023\051\105\156\164\162\165\163\164\040

\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151

\157\156\040\101\165\164\150\157\162\151\164\171\040\055\040\107

\064

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\021\000\331\265\103\177\257\251\071\017\000\000\000\000\125 \145\255\130

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

 ${\tt CKA\_TRUST\_EMAIL\_PROTECTION\ CK\_TRUST\ CKT\_NSS\_TRUSTED\_DELEGATOR}$ 

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

#

# Certificate "Microsoft ECC Root Certificate Authority 2017"

#

- # Issuer: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US
- # Serial Number:66:f2:3d:af:87:de:8b:b1:4a:ea:0c:57:31:01:c2:ec
- # Subject: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US
- # Not Valid Before: Wed Dec 18 23:06:45 2019
- # Not Valid After: Fri Jul 18 23:16:04 2042
- # Fingerprint (SHA-256):
- 35:8D:F3:9D:76:4A:F9:E1:B7:66:E9:C9:72:DF:35:2E:E1:5C:FA:C2:27:AF:6A:D1:D7:0E:8E:4A:6E:DC:BA:02
- # Fingerprint (SHA1): 99:9A:64:C3:7F:F4:7D:9F:AB:95:F1:47:69:89:14:60:EE:C4:C3:C5
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "Microsoft ECC Root Certificate Authority 2017"
- CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509
- CKA\_SUBJECT MULTILINE\_OCTAL
- \060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
- \036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
- $\label{eq:condition} $$ \frac{157}{146}\frac{040}{103}\frac{157}{162}\frac{160}{157}\frac{162}{141}\frac{164}{151}\frac{157}{156}\frac{061}{157} $$$
- \066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
- \157\146\164\040\105\103\103\040\122\157\157\164\040\103\145\162
- \164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
- \164\171\040\062\060\061\067

**END** 

CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \00145\001\006\003\125\004\006\023\002\125\123\061\036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162\115\151\143\162\157\163\157\146\164\040\105\103\103\040\122\157\157\164\040\103\145\162\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060\061\067$ 

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\020\146\362\075\257\207\336\213\261\112\352\014\127\061\001\302\354$ 

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\131\060\202\001\337\240\003\002\001\002\002\020\146 \362\075\257\207\336\213\261\112\352\014\127\061\001\302\354\060 \012\006\010\052\206\110\316\075\004\003\003\060\145\061\013\060 \011\006\003\125\004\006\023\002\125\123\061\036\060\034\006\003 \125\004\012\023\025\115\151\143\162\157\163\157\146\164\040\103

\157\162\160\157\162\141\164\151\157\156\061\066\060\064\006\003 \125\004\003\023\055\115\151\143\162\157\163\157\146\164\040\105 \061\067\060\036\027\015\061\071\061\062\061\070\062\063\060\066 \064\065\132\027\015\064\062\060\067\061\070\062\063\061\066\060 \064\132\060\145\061\013\060\011\006\003\125\004\006\023\002\125 \157\163\157\146\164\040\103\157\162\160\157\162\141\164\151\157 \156\061\066\060\064\006\003\125\004\003\023\055\115\151\143\162  $\label{eq:condition} $$ \frac{157}{163}\frac{157}{146}\frac{164}{040}\frac{105}{103}\frac{103}{040}\frac{122}{157}\frac{157}{164}\frac{040}{103} $$$ \145\162\164\151\146\151\143\141\164\145\040\101\165\164\150\157 \162\151\164\171\040\062\060\061\067\060\166\060\020\006\007\052 \206\110\316\075\002\001\006\005\053\201\004\000\042\003\142\000  $\label{eq:condition} $$ 0.04\324\274\075\002\102\165\101\023\043\315\200\004\206\002\121 $$$ \057\152\250\201\142\013\145\314\366\312\235\036\157\112\146\121 \242\003\331\235\221\372\266\026\261\214\156\336\174\315\333\171 \246\057\316\273\316\161\057\345\245\253\050\354\143\004\146\231 \370\372\362\223\020\005\341\201\050\102\343\306\150\364\346\033  $\label{eq:condition} $$ \204\140\112\211\257\355\171\017\073\316\361\366\104\365\001\170 $$$ \300\243\124\060\122\060\016\006\003\125\035\017\001\001\377\004 \004\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004  $\label{eq:condition} $$ \005\060\003\001\001\377\060\035\006\003\125\035\016\004\026\004$ \024\310\313\231\162\160\122\014\370\346\276\262\004\127\051\052 \317\102\020\355\065\060\020\006\011\053\006\001\004\001\202\067 \025\001\004\003\002\001\000\060\012\006\010\052\206\110\316\075 \004\003\003\003\150\000\060\145\002\060\130\362\115\352\014\371 \137\136\356\140\051\313\072\362\333\326\062\204\031\077\174\325 \057\302\261\314\223\256\120\273\011\062\306\306\355\176\311\066 \224\022\344\150\205\006\242\033\320\057\002\061\000\231\351\026  $\label{eq:condition} $$ \264\016\372\126\110\324\244\060\026\221\170\333\124\214\145\001 $$$ \212\347\120\146\302\061\267\071\272\270\032\042\007\116\374\153 \124\026\040\377\053\265\347\114\014\115\246\117\163 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "Microsoft ECC Root Certificate Authority 2017"
```

<sup>#</sup> Issuer: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US

<sup>#</sup> Serial Number:66:f2:3d:af:87:de:8b:b1:4a:ea:0c:57:31:01:c2:ec

<sup>#</sup> Subject: CN=Microsoft ECC Root Certificate Authority 2017,O=Microsoft Corporation,C=US

<sup>#</sup> Not Valid Before: Wed Dec 18 23:06:45 2019

<sup>#</sup> Not Valid After: Fri Jul 18 23:16:04 2042

<sup>#</sup> Fingerprint (SHA-256):

<sup>35:8</sup>D:F3:9D:76:4A:F9:E1:B7:66:E9:C9:72:DF:35:2E:E1:5C:FA:C2:27:AF:6A:D1:D7:0E:8E:4A:6E:DC:BA:02

<sup>#</sup> Fingerprint (SHA1): 99:9A:64:C3:7F:F4:7D:9F:AB:95:F1:47:69:89:14:60:EE:C4:C3:C5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

```
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft ECC Root Certificate Authority 2017"
CKA CERT SHA1 HASH MULTILINE OCTAL
\231\232\144\303\177\364\175\237\253\225\361\107\151\211\024\140
\356\304\303\305
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\335\241\003\346\112\223\020\321\277\360\031\102\313\376\355\147
END
CKA_ISSUER MULTILINE_OCTAL
\060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\label{eq:condition} $$ \036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163
\label{eq:condition} $$ \frac{157}{146}\frac{040}{103}\frac{157}{162}\frac{160}{157}\frac{162}{141}\frac{164}{151}\frac{157}{156}\frac{061}{157} $$
\066\060\064\006\003\125\004\003\023\055\115\151\143\162\157\163
\label{eq:condition} $$ \frac{157}146\\164\\040\\105\\103\\103\\040\\122\\157\\157\\164\\040\\103\\145\\162
\164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151
\164\171\040\062\060\061\067
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\146\362\075\257\207\336\213\261\112\352\014\127\061\001
\302\354
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Microsoft RSA Root Certificate Authority 2017"
# Issuer: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US
# Serial Number:1e:d3:97:09:5f:d8:b4:b3:47:70:1e:aa:be:7f:45:b3
# Subject: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US
# Not Valid Before: Wed Dec 18 22:51:22 2019
# Not Valid After: Fri Jul 18 23:00:23 2042
# Fingerprint (SHA-256):
C7:41:F7:0F:4B:2A:8D:88:BF:2E:71:C1:41:22:EF:53:EF:10:EB:A0:CF:A5:E6:4C:FA:20:F4:18:85:30:73:E0
# Fingerprint (SHA1): 73:A5:E6:4A:3B:FF:83:16:FF:0E:DC:CC:61:8A:90:6E:4E:AE:4D:74
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Microsoft RSA Root Certificate Authority 2017"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
```

CKA TOKEN CK BBOOL CK TRUE

 $\label{lem:condition} $$ \036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163\157\146\164\040\103\157\162\160\157\162\141\164\151\157\156\061\066\060\064\0003\125\0004\0003\023\055\115\151\143\162\157\163\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151\164\171\040\062\060\061\067$$ 

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\145\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$ \036\060\034\006\003\125\004\012\023\025\115\151\143\162\157\163 $$ \157\146\164\040\103\125\004\003\023\055\115\151\143\162\157\163 $$ \157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162 $$ \164\151\146\151\143\141\164\145\040\101\165\164\150\157\162\151 $$ \164\171\040\062\060\061\067$$ 

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\036\323\227\011\137\330\264\263\107\160\036\252\276\177 \105\263

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \0.060\202\005\250\060\202\003\220\240\003\002\001\002\002\002\003\6$ \323\227\011\137\330\264\263\107\160\036\252\276\177\105\263\060 \015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\145 \061\013\060\011\006\003\125\004\006\023\002\125\123\061\036\060 \034\006\003\125\004\012\023\025\115\151\143\162\157\163\157\146 \164\040\103\157\162\160\157\162\141\164\151\157\156\061\066\060 \064\006\003\125\004\003\023\055\115\151\143\162\157\163\157\146 \164\040\122\123\101\040\122\157\157\164\040\103\145\162\164\151  $\\ 146 \\ 151 \\ 143 \\ 141 \\ 164 \\ 145 \\ 040 \\ 101 \\ 165 \\ 164 \\ 150 \\ 157 \\ 162 \\ 151 \\ 164 \\ 171 \\$ \040\062\060\061\067\060\036\027\015\061\071\061\062\061\070\062 \062\065\061\062\062\132\027\015\064\062\060\067\061\070\062\063 \060\060\062\063\132\060\145\061\013\060\011\006\003\125\004\006 \023\002\125\123\061\036\060\034\006\003\125\004\012\023\025\115 \151\143\162\157\163\157\146\164\040\103\157\162\160\157\162\141 \164\151\157\156\061\066\060\064\006\003\125\004\003\023\055\115  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ \164\150\157\162\151\164\171\040\062\060\061\067\060\202\002\042 \060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003  $\label{eq:condition} $$ \202\002\017\000\060\202\002\012\002\202\002\001\000\312\133\276$$ \224\063\214\051\225\221\026\012\225\275\107\142\301\211\363\231 \066\337\106\220\311\245\355\170\152\157\107\221\150\370\047\147 \120\063\035\241\246\373\340\345\103\243\204\002\127\001\135\234 \110\100\202\123\020\274\277\307\073\150\220\266\202\055\345\364 \145\320\314\155\031\314\225\371\173\254\112\224\255\016\336\113 \103\035\207\007\222\023\220\200\203\144\065\071\004\374\345\351

\154\263\266\037\120\224\070\145\120\134\027\106\271\266\205\265 \034\265\027\350\326\105\235\330\262\046\260\312\304\160\112\256 \140\244\335\263\331\354\374\073\325\127\162\274\077\310\311\262 \336\113\153\370\043\154\003\300\005\275\225\307\315\163\073\146 \200\144\343\032\254\056\371\107\005\362\006\266\233\163\365\170 \063\133\307\241\373\047\052\241\264\232\221\214\221\323\072\202 \076\166\100\264\315\122\141\121\160\050\077\305\305\132\362\311 \214\111\273\024\133\115\310\377\147\115\114\022\226\255\365\376 \170\250\227\207\327\375\136\040\200\334\241\113\042\373\324\211 \255\272\316\107\227\107\125\173\217\105\310\147\050\204\225\034  $\label{eq:condition} $$ \frac{150\\060\\357\\357\\111\\340\\065\\173\\144\\347\\230\\260\\224\\332\\115\\205$  $\label{eq:condition} $$ \073\076\125\304\050\257\127\363\236\023\333\106\047\237\036\242 $$$ \136\104\203\244\245\312\325\023\263\113\077\304\343\302\346\206  $\label{eq:condition} $$ 141\244\122\060\271\172\040\117\157\017\070\123\313\063\014\023$  $\label{eq:condition} $$ \053\217\326\232\275\052\310\055\261\034\175\113\121\312\107\321$ \110\047\162\135\207\353\325\105\346\110\145\235\257\122\220\272  $\label{eq:condition} $$ \frac{3}{242}030\\145\\127\\022\\237\\150\\271\\324\\025\\153\\224\\304\\151\\042$ \230\364\063\340\355\371\121\216\101\120\311\064\117\166\220\254 \374\070\301\330\341\173\271\343\343\224\341\106\151\313\016\012 \120\153\023\272\254\017\067\132\267\022\265\220\201\036\126\256 \127\042\206\331\311\322\321\327\121\343\253\073\306\125\375\036 \016\323\164\012\321\332\252\352\151\270\227\050\217\110\304\007  $\label{eq:condition} $$ 370\122\103\072\364\312\125\065\054\260\246\152\300\234\371\362$ \201\341\022\152\300\105\331\147\263\316\377\043\242\211\012\124  $\label{eq:condition} $\324\024\271\052\250\327\354\371\253\315\045\130\062\171\217\220$$ \133\230\071\304\010\006\301\254\177\016\075\000\245\002\003\001 \000\001\243\124\060\122\060\016\006\003\125\035\017\001\001\377  $\label{eq:condition} $$ \004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377 $$$ \004\005\060\003\001\001\377\060\035\006\003\125\035\016\004\026 \004\024\011\313\131\177\206\262\160\217\032\303\071\343\300\331  $\label{eq:condition} $$ \frac{351}{277} \frac{273}{115} \frac{62}{043} \frac{060}{020} \frac{006}{011} \frac{053}{006} \frac{001}{004} \frac{001}{202}$ \067\025\001\004\003\002\001\000\060\015\006\011\052\206\110\206 \367\015\001\001\001\014\005\000\003\202\002\001\000\254\257\076\135 \302\021\226\211\216\243\347\222\326\227\025\270\023\242\246\102 \056\002\315\026\005\131\047\312\040\350\272\270\350\032\354\115 \250\227\126\256\145\103\261\217\000\233\122\315\125\315\123\071 \155\142\114\213\015\133\174\056\104\277\203\020\217\363\123\202 \200\303\117\072\307\156\021\077\346\343\026\221\204\373\155\204  $\label{eq:condition} $$ \frac{177}064\\164\\255\\211\\247\\316\\271\\327\\327\\237\\204\\144\\222\\276\\225$ \241\255\011\123\063\335\356\012\352\112\121\216\157\125\253\272 \265\224\106\256\214\177\330\242\120\045\145\140\200\106\333\063 \004\256\154\265\230\164\124\045\334\223\344\370\343\125\025\075 \270\155\303\012\244\022\301\151\205\156\337\144\361\123\231\341 \112\165\040\235\225\017\344\326\334\003\361\131\030\350\107\211  $\label{eq:condition} $$ \262\127\132\224\266\251\330\027\053\027\111\345\166\313\301\126$ \231\072\067\261\377\151\054\221\221\223\341\337\114\243\067\166 \115\241\237\370\155\036\035\323\372\354\373\364\105\035\023\155 \317\367\131\345\042\047\162\053\206\363\127\273\060\355\044\115

\334\175\126\273\243\263\370\064\171\211\301\340\362\002\141\367 \246\374\017\273\034\027\013\256\101\331\174\275\047\243\375\056 \072\321\223\224\261\163\035\044\213\257\133\040\211\255\267\147  $\label{eq:condition} $$ 146\171\365\072\306\246\226\063\376\123\222\310\106\261\021\221$ \306\231\177\217\311\326\146\061\040\101\020\207\055\014\326\301 \257\064\230\312\144\203\373\023\127\321\301\360\074\172\214\245 \301\375\225\041\240\161\301\223\147\161\022\352\217\210\012\151  $\label{eq:condition} $$ \031\144\231\043\126\373\254\052\056\160\276\146\304\014\204\357 $$$ \345\213\363\223\001\370\152\220\223\147\113\262\150\243\265\142 \217\351\077\214\172\073\136\017\347\214\270\306\174\357\067\375 \164\342\310\117\063\162\341\224\071\155\275\022\257\276\014\116 \160\174\033\157\215\263\062\223\163\104\026\155\350\364\367\340 \225\200\217\226\135\070\244\364\253\336\012\060\207\223\330\115  $\label{eq:condition} $$ \000\161\142\105\047\113\072\102\204\133\177\145\267\147\064\122 $$$  $\label{eq:condition} $$ \05\234\026\153\252\250\330\173\243\102\114\161\307\014\312\076$ \203\344\246\357\267\001\060\136\121\243\171\365\160\151\246\101 \104\017\206\260\054\221\306\075\352\256\017\204

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Microsoft RSA Root Certificate Authority 2017"
- # Issuer: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US
- # Serial Number:1e:d3:97:09:5f:d8:b4:b3:47:70:1e:aa:be:7f:45:b3
- # Subject: CN=Microsoft RSA Root Certificate Authority 2017,O=Microsoft Corporation,C=US
- # Not Valid Before: Wed Dec 18 22:51:22 2019
- # Not Valid After: Fri Jul 18 23:00:23 2042
- # Fingerprint (SHA-256):

C7:41:F7:0F:4B:2A:8D:88:BF:2E:71:C1:41:22:EF:53:EF:10:EB:A0:CF:A5:E6:4C:FA:20:F4:18:85:30:73:E0

# Fingerprint (SHA1): 73:A5:E6:4A:3B:FF:83:16:FF:0E:DC:CC:61:8A:90:6E:4E:AE:4D:74

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Microsoft RSA Root Certificate Authority 2017"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\163\245\346\112\073\377\203\026\377\016\334\314\141\212\220\156\116\256\115\164

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \020\377\000\377\317\311\370\307\172\300\356\065\216\311\017\107$ END$ 

CKA\_ISSUER MULTILINE\_OCTAL

```
\157\146\164\040\122\123\101\040\122\157\157\164\040\103\145\162
\164\171\040\062\060\061\067
END
CKA SERIAL NUMBER MULTILINE OCTAL
\label{eq:condition} $$ \002\020\036\323\227\011\137\330\264\263\107\160\036\252\276\177 
\105\263
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "e-Szigno Root CA 2017"
# Issuer: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
# Serial Number:01:54:48:ef:21:fd:97:59:0d:f5:04:0a
# Subject: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
# Not Valid Before: Tue Aug 22 12:07:06 2017
# Not Valid After: Fri Aug 22 12:07:06 2042
# Fingerprint (SHA-256):
BE:B0:0B:30:83:9B:9B:C3:2C:32:E4:44:79:05:95:06:41:F2:64:21:B1:5E:D0:89:19:8B:51:8A:E2:EA:1B:99
# Fingerprint (SHA1): 89:D4:83:03:4F:9E:9A:48:80:5F:72:37:D4:A9:A6:EF:CB:7C:1F:D1
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "e-Szigno Root CA 2017"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA_SUBJECT MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055
\label{eq:local_
\060\061\067
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055
```

\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062\060\061\067

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\014\001\124\110\357\041\375\227\131\015\365\004\012 $$$ 

**END** 

CKA VALUE MULTILINE OCTAL

\060\202\002\100\060\202\001\345\240\003\002\001\002\002\014\001  $\label{eq:condition} $$ 124\110\357\041\375\227\131\015\365\004\012\060\012\006\010\052$ \206\110\316\075\004\003\002\060\161\061\013\060\011\006\003\125 \004\006\023\002\110\125\061\021\060\017\006\003\125\004\007\014  $\label{eq:condition} $$ \010\102\165\144\141\160\145\163\164\061\026\060\024\006\003\125$$ \004\012\014\015\115\151\143\162\157\163\145\143\040\114\164\144 \056\061\027\060\025\006\003\125\004\141\014\016\126\101\124\110 \125\055\062\063\065\070\064\064\071\067\061\036\060\034\006\003 \125\004\003\014\025\145\055\123\172\151\147\156\157\040\122\157 \157\164\040\103\101\040\062\060\061\067\060\036\027\015\061\067 \060\070\062\062\061\062\060\067\060\066\132\027\015\064\062\060 \070\062\062\061\062\060\067\060\066\132\060\161\061\013\060\011  $\label{eq:condition} $$ \006\003\125\004\006\023\002\110\125\061\021\060\017\006\003\125$ \004\007\014\010\102\165\144\141\160\145\163\164\061\026\060\024 \006\003\125\004\012\014\015\115\151\143\162\157\163\145\143\040 \101\124\110\125\055\062\063\065\070\064\064\071\067\061\036\060 \034\006\003\125\004\003\014\025\145\055\123\172\151\147\156\157 \040\122\157\157\164\040\103\101\040\062\060\061\067\060\131\060 \023\006\007\052\206\110\316\075\002\001\006\010\052\206\110\316  $\label{eq:condition} $$ \075\003\001\007\003\102\000\004\226\334\075\212\330\260\173\157$ \306\047\276\104\220\261\263\126\025\173\216\103\044\175\032\204 \131\356\143\150\262\306\136\207\320\025\110\036\250\220\255\275 \123\242\332\336\072\220\246\140\137\150\062\265\206\101\337\207 \133\054\173\305\376\174\172\332\243\143\060\141\060\017\006\003 \125\035\023\001\001\377\004\005\060\003\001\001\377\060\016\006 \003\125\035\017\001\001\377\004\004\003\002\001\006\060\035\006 \003\125\035\016\004\026\004\024\207\021\025\010\321\252\301\170 \014\261\257\316\306\311\220\357\277\060\004\300\060\037\006\003 \125\035\043\004\030\060\026\200\024\207\021\025\010\321\252\301 \170\014\261\257\316\306\311\220\357\277\060\004\300\060\012\006  $\label{eq:condition} $$ \0.052\206\110\316\0.075\0.04\0.03\0.02\0.03\111\0.00\0.60\1.06\0.02\0.41 $$$  $\label{eq:condition} $$ \000\265\127\335\327\212\125\013\066\341\206\104\372\324\331\150 $$$ \215\270\334\043\212\212\015\324\057\175\352\163\354\277\115\154 \250\002\041\000\313\245\264\022\372\347\265\350\317\176\223\374 \363\065\217\157\116\132\174\264\274\116\262\374\162\252\133\131 \371\347\334\061

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Issuer: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
# Serial Number:01:54:48:ef:21:fd:97:59:0d:f5:04:0a
# Subject: CN=e-Szigno Root CA 2017,OID.2.5.4.97=VATHU-23584497,O=Microsec Ltd.,L=Budapest,C=HU
# Not Valid Before: Tue Aug 22 12:07:06 2017
# Not Valid After: Fri Aug 22 12:07:06 2042
# Fingerprint (SHA-256):
BE:B0:0B:30:83:9B:9B:C3:2C:32:E4:44:79:05:95:06:41:F2:64:21:B1:5E:D0:89:19:8B:51:8A:E2:EA:1B:99
# Fingerprint (SHA1): 89:D4:83:03:4F:9E:9A:48:80:5F:72:37:D4:A9:A6:EF:CB:7C:1F:D1
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "e-Szigno Root CA 2017"
CKA CERT SHA1 HASH MULTILINE OCTAL
\211\324\203\003\117\236\232\110\200\137\162\067\324\251\246\357
\313\174\037\321
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\336\037\366\236\204\256\247\264\041\316\036\130\175\321\204\230
END
CKA_ISSUER MULTILINE_OCTAL
\060\161\061\013\060\011\006\003\125\004\006\023\002\110\125\061
\021\060\017\006\003\125\004\007\014\010\102\165\144\141\160\145
\163\164\061\026\060\024\006\003\125\004\012\014\015\115\151\143
\162\157\163\145\143\040\114\164\144\056\061\027\060\025\006\003
\125\004\141\014\016\126\101\124\110\125\055\062\063\065\070\064
\064\071\067\061\036\060\034\006\003\125\004\003\014\025\145\055
\123\172\151\147\156\157\040\122\157\157\164\040\103\101\040\062
\060\061\067
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\014\001\124\110\357\041\375\227\131\015\365\004\012
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "certSIGN Root CA G2"
# Issuer: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO
# Serial Number:11:00:34:b6:4e:c6:36:2d:36
# Subject: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO
# Not Valid Before: Mon Feb 06 09:27:35 2017
# Not Valid After: Thu Feb 06 09:27:35 2042
```

# Trust for "e-Szigno Root CA 2017"

# Fingerprint (SHA-256):

65:7C:FE:2F:A7:3F:AA:38:46:25:71:F3:32:A2:36:3A:46:FC:E7:02:09:51:71:07:02:CD:FB:B6:EE:DA:33:05

# Fingerprint (SHA1): 26:F9:93:B4:ED:3D:28:27:B0:B9:4B:A7:E9:15:1D:A3:8D:92:E5:32

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "certSIGN Root CA G2"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \0011\061\013\060\011\006\003\125\004\006\023\002\122\117\061\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111\107\116\040\123\101\061\034\060\032\006\003\125\0004\013\023\023\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101\040\107\062$ 

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000101\061\013\060\011\006\003\125\004\006\023\002\122\117\061\024\060\022\006\003\125\004\012\023\013\103\105\122\124\123\111\107\116\040\123\101\061\034\060\032\006\003\125\004\013\023\023\143\145\162\164\123\111\107\116\040\122\117\117\124\040\103\101\040\107\062$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\011\021\000\064\266\116\306\066\055\066$$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\107\060\202\003\057\240\003\002\001\002\002\011\021 \000\064\266\116\306\066\055\066\060\015\006\011\052\206\110\206 \367\015\001\001\013\005\000\060\101\061\013\060\011\006\003\125 \004\006\023\002\122\117\061\024\060\022\006\003\125\004\012\023 \013\103\105\122\124\123\111\107\116\040\123\101\061\034\060\032 \006\003\125\004\013\023\023\143\145\162\164\123\111\107\116\040 \122\117\117\124\040\103\101\040\107\062\060\036\027\015\061\067 \060\062\060\066\060\071\062\067\063\065\132\027\015\064\062\060 \062\060\066\060\071\062\067\063\065\132\060\101\061\013\060\011  $\\ \\006\\003\\125\\004\\006\\023\\002\\122\\117\\061\\024\\060\\022\\006\\003\\125$ \107\116\040\122\117\117\124\040\103\101\040\107\062\060\202\002  $\\ \langle 042 \rangle 060 \rangle 015 \rangle 006 \rangle 011 \rangle 052 \rangle 206 \rangle 110 \rangle 206 \rangle 367 \rangle 015 \rangle 001 \rangle 001 \rangle 005 \rangle 000$ \003\202\002\017\000\060\202\002\012\002\202\002\001\000\300\305 \165\031\221\175\104\164\164\207\376\016\073\226\334\330\001\026 \314\356\143\221\347\013\157\316\073\012\151\032\174\302\343\257 \202\216\206\327\136\217\127\353\323\041\131\375\071\067\102\060 \276\120\352\266\017\251\210\330\056\055\151\041\347\321\067\030 \116\175\221\325\026\137\153\133\000\302\071\103\015\066\205\122

\271\123\145\017\035\102\345\217\317\005\323\356\334\014\032\331 \270\213\170\042\147\344\151\260\150\305\074\344\154\132\106\347 \315\307\372\357\304\354\113\275\152\244\254\375\314\050\121\357 \222\264\051\253\253\065\232\114\344\304\010\306\046\314\370\151 \237\344\234\360\051\323\134\371\306\026\045\236\043\303\040\301 \075\017\077\070\100\260\376\202\104\070\252\132\032\212\153\143 \130\070\264\025\323\266\021\151\173\036\124\356\214\032\042\254 \162\227\077\043\131\233\311\042\204\301\007\117\314\177\342\127 \312\022\160\273\246\145\363\151\165\143\275\225\373\033\227\315 \344\250\257\366\321\116\250\331\212\161\044\315\066\075\274\226 \304\361\154\251\256\345\317\015\156\050\015\260\016\265\312\121  $\label{eq:condition} $$ \frac{173}170\024\303\040\057\177\373\024\125\341\021\231\375\325\012$$ \241\236\002\343\142\137\353\065\113\054\270\162\350\076\075\117 \254\054\273\056\206\342\243\166\217\345\223\052\317\245\253\310 \134\215\113\006\377\022\106\254\170\313\024\007\065\340\251\337 \213\351\257\025\117\026\211\133\275\366\215\306\131\256\210\205  $\label{eq:condition} $$ \0301\211\353\037\147\305\105\216\377\155\067\066\053\170\146 $$$ \203\221\121\053\075\377\121\167\166\142\241\354\147\076\076\201 \203\340\126\251\120\037\037\172\231\253\143\277\204\027\167\361 \015\073\337\367\234\141\263\065\230\212\072\262\354\074\032\067 \077\176\217\222\317\331\022\024\144\332\020\002\025\101\377\117 \304\353\034\243\311\372\231\367\106\351\341\030\331\261\270\062  $\begin{tabular}{l} $$ \055\313\024\014\120\330\203\145\203\356\271\134\317\313\005\132 \end{tabular}$ \114\372\031\227\153\326\135\023\323\302\134\124\274\062\163\240 \170\365\361\155\036\313\237\245\246\237\042\334\321\121\236\202 \171\144\140\051\023\076\243\375\117\162\152\253\342\324\345\270 \044\125\054\104\113\212\210\104\234\312\204\323\052\073\002\003  $\label{eq:condition} $$ \001\000\001\243\102\060\100\060\017\006\003\125\035\023\001\001 $$$ \377\004\005\060\003\001\001\377\060\016\006\003\125\035\017\001 \001\377\004\004\003\002\001\006\060\035\006\003\125\035\016\004  $\label{eq:condition} $$ \026\004\024\202\041\055\146\306\327\240\340\025\353\316\114\011 $$$ \167\304\140\236\124\156\003\060\015\006\011\052\206\110\206\367 \015\001\001\013\005\000\003\202\002\001\000\140\336\032\270\347 \362\140\202\325\003\063\201\313\006\212\361\042\111\351\350\352 \221\177\306\063\136\150\031\003\206\073\103\001\317\007\160\344 \010\036\145\205\221\346\021\042\267\365\002\043\216\256\271\036 \175\037\176\154\346\275\045\325\225\032\362\005\246\257\205\002 \157\256\370\326\061\377\045\311\112\310\307\212\251\331\237\113 \111\233\021\127\231\222\103\021\336\266\063\244\314\327\215\144 \175\324\315\074\050\054\264\232\226\352\115\365\304\104\304\045 \252\040\200\330\051\125\367\340\101\374\006\046\377\271\066\365 \103\024\003\146\170\341\021\261\332\040\137\106\000\170\000\041 \245\036\000\050\141\170\157\250\001\001\217\235\064\232\377\364 \070\220\373\270\321\263\162\006\311\161\346\201\305\171\355\013 \246\171\362\023\013\234\367\135\016\173\044\223\264\110\333\206 \137\336\120\206\170\347\100\346\061\250\220\166\160\141\257\234 \131\237\366\161\257\234\013\321\012\070\371\006\042\203\123\045

\014\374\121\304\346\276\342\071\225\013\044\255\257\321\225\344 \226\327\164\144\153\161\116\002\074\252\205\363\040\243\103\071 \166\133\154\120\376\232\234\024\036\145\024\212\025\275\243\202 \105\132\111\126\152\322\234\261\143\062\345\141\340\123\042\016 \247\012\111\352\313\176\037\250\342\142\200\366\020\105\122\230 \006\030\336\245\315\057\177\252\324\351\076\010\162\354\043\003 \002\074\246\252\330\274\147\164\075\024\027\373\124\113\027\343  $\label{eq:condition} $$ 323\171\075\155\153\111\311\050\016\056\164\120\277\014\331\106$ \072\020\206\311\247\077\351\240\354\177\353\245\167\130\151\161 \346\203\012\067\362\206\111\152\276\171\010\220\366\002\026\144  $\label{eq:condition} $$ \076\345\332\114\176\014\064\311\371\137\266\263\050\121\247\247$  $\label{eq:condition} $$ \053\252\111\372\215\145\051\116\343\153\023\247\224\243\055\121 $$$ \155\170\014\104\313\337\336\010\157\316\243\144\253\323\225\204  $\label{eq:condition} $\324\271\122\124\162\173\226\045\314\274\151\343\110\156\015\320$$ \307\235\047\232\252\370\023\222\335\036\337\143\237\065\251\026 \066\354\214\270\203\364\075\211\217\315\264\027\136\327\263\027 \101\020\135\047\163\140\205\127\111\042\007

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "certSIGN Root CA G2"
- # Issuer: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO
- # Serial Number:11:00:34:b6:4e:c6:36:2d:36
- # Subject: OU=certSIGN ROOT CA G2,O=CERTSIGN SA,C=RO
- # Not Valid Before: Mon Feb 06 09:27:35 2017 # Not Valid After: Thu Feb 06 09:27:35 2042
- # Fingerprint (SHA-256):
- 65:7C:FE:2F:A7:3F:AA:38:46:25:71:F3:32:A2:36:3A:46:FC:E7:02:09:51:71:07:02:CD:FB:B6:EE:DA:33:05
- # Fingerprint (SHA1): 26:F9:93:B4:ED:3D:28:27:B0:B9:4B:A7:E9:15:1D:A3:8D:92:E5:32

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "certSIGN Root CA G2"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\046\371\223\264\355\075\050\047\260\271\113\247\351\025\035\243 \215\222\345\062

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \frac{361\\165\\212\\306\\031\\317\\224\\267\\367\\145\\040\\207\\303\\227\\307$ END$ 

CKA\_ISSUER MULTILINE\_OCTAL

```
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\011\021\000\064\266\116\306\066\055\066
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Trustwave Global Certification Authority"
# Issuer: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Serial Number:05:f7:0e:86:da:49:f3:46:35:2e:ba:b2
# Subject: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Not Valid Before: Wed Aug 23 19:34:12 2017
# Not Valid After: Sat Aug 23 19:34:12 2042
# Fingerprint (SHA-256):
97:55:20:15:F5:DD:FC:3C:87:88:C0:06:94:45:55:40:88:94:45:00:84:F1:00:86:70:86:BC:1A:2B:B5:8D:C8
# Fingerprint (SHA1): 2F:8F:36:4F:E1:58:97:44:21:59:87:A5:2A:9A:D0:69:95:26:7F:B5
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Trustwave Global Certification Authority"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\label{eq:condition} $$ \060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004
\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157
\\ 142\\141\\154\\040\\103\\145\\162\\164\\151\\146\\151\\143\\141\\164\\151\\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156
\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\014\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
```

\147\163\054\040\111\156\143\056\061\061\060\057\006\003\125\004

\040\107\062

\003\014\050\124\162\165\163\164\167\141\166\145\040\107\154\157\142\141\154\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL \002\014\005\367\016\206\332\111\363\106\065\056\272\262

**END** 

### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\005\332\060\202\003\302\240\003\002\001\002\002\014\005$ \367\016\206\332\111\363\106\065\056\272\262\060\015\006\011\052 \206\110\206\367\015\001\001\013\005\000\060\201\210\061\013\060  $\label{eq:condition} $$ \004\003\125\004\006\023\002\125\123\061\021\060\017\006\003$ \125\004\010\014\010\111\154\154\151\156\157\151\163\061\020\060  $\label{eq:condition} $$ \006\003\125\004\007\014\007\103\150\151\143\141\147\157\061 $$$  $\label{eq:condition} $$ \041\060\037\006\003\125\004\012\014\030\124\162\165\163\164\167$ \141\166\145\040\110\157\154\144\151\156\147\163\054\040\111\156 \143\056\061\061\060\057\006\003\125\004\003\014\050\124\162\165 \163\164\167\141\166\145\040\107\154\157\142\141\154\040\103\145 \162\164\151\146\151\143\141\164\151\157\156\040\101\165\164\150 \157\162\151\164\171\060\036\027\015\061\067\060\070\062\063\061 \071\063\064\061\062\132\027\015\064\062\060\070\062\063\061\071 \063\064\061\062\132\060\201\210\061\013\060\011\006\003\125\004  $\label{eq:condition} $$ \006\023\002\125\123\061\021\060\017\006\003\125\004\010\014\010 $$$ \111\154\154\151\156\157\151\163\061\020\060\016\006\003\125\004 \007\014\007\103\150\151\143\141\147\157\061\041\060\037\006\003 \125\004\012\014\030\124\162\165\163\164\167\141\166\145\040\110 \157\154\144\151\156\147\163\054\040\111\156\143\056\061\061\060  $\label{eq:condition} $$ \006\003\125\004\003\014\050\124\162\165\163\164\167\141\166$$$ \145\040\107\154\157\142\141\154\040\103\145\162\164\151\146\151 \143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171  $\label{eq:condition} $$ \0.060\202\0.042\0.060\0.15\0.06\0.11\0.52\2.06\1.10\2.06\3.67\0.15\0.01\0.01$$ \001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001 \000\271\135\121\050\113\074\067\222\321\202\316\275\035\275\315 \335\270\253\317\012\076\341\135\345\334\252\011\271\127\002\076 \346\143\141\337\362\017\202\143\256\243\367\254\163\321\174\347 \263\013\257\010\000\011\131\177\315\051\052\210\223\207\027\030 \200\355\210\262\264\266\020\037\055\326\137\125\242\023\135\321  $\label{eq:condition} $$ 306\353\006\126\211\210\376\254\062\235\375\134\303\005\307\156$$ \356\206\211\272\210\003\235\162\041\206\220\256\217\003\245\334  $\label{eq:condition} $$ \237\210\050\313\243\222\111\017\354\320\017\342\155\104\117\200 $$$ \152\262\324\347\240\012\123\001\272\216\227\221\166\156\274\374 \325\153\066\346\100\210\326\173\057\137\005\350\054\155\021\363  $\label{eq:condition} $$ 347\262\276\222\104\114\322\227\244\376\322\162\201\103\007\234 $$$ \351\021\076\365\213\032\131\175\037\150\130\335\004\000\054\226 \363\103\263\176\230\031\164\331\234\163\331\030\276\101\307\064 \171\331\364\142\302\103\271\263\047\260\042\313\371\075\122\307 \060\107\263\311\076\270\152\342\347\350\201\160\136\102\213\117 \046\245\376\072\302\040\156\273\370\026\216\315\014\251\264\033

\154\166\020\341\130\171\106\076\124\316\200\250\127\011\067\051 \033\231\023\217\014\310\326\054\034\373\005\350\010\225\075\145 \106\334\356\315\151\342\115\217\207\050\116\064\013\076\317\024 \331\273\335\266\120\232\255\167\324\031\326\332\032\210\310\116 \033\047\165\330\262\010\361\256\203\060\271\021\016\315\207\360 \204\215\025\162\174\241\357\314\362\210\141\272\364\151\273\014 \214\013\165\127\004\270\116\052\024\056\075\017\034\036\062\246 \142\066\356\146\342\042\270\005\100\143\020\042\363\063\035\164 \162\212\054\365\071\051\240\323\347\033\200\204\055\305\075\343 \115\261\375\032\157\272\145\007\073\130\354\102\105\046\373\330 \332\045\162\304\366\000\261\042\171\275\343\174\131\142\112\234  $\label{eq:condition} $$ \005\157\075\316\346\326\107\143\231\306\044\157\162\022\310\254$$ \177\220\264\013\221\160\350\267\346\026\020\161\027\316\336\006 \267\010\230\114\345\021\031\256\102\200\334\373\220\005\324\370 \120\312\276\344\255\307\302\224\327\026\235\346\027\217\257\066 \373\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035 \023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125 \035\016\004\026\004\024\231\340\031\147\015\142\333\166\263\332  $\label{eq:condition} $$ \075\270\133\350\375\102\322\061\016\207\060\016\006\003\125\035 $$$ \017\001\001\377\004\004\003\002\001\006\060\015\006\011\052\206 \110\206\367\015\001\001\013\005\000\003\202\002\001\000\230\163  $\label{eq:condition} $$ 160\342\260\323\355\071\354\114\140\331\251\022\206\027\036\226$ \320\350\124\050\073\144\055\041\246\370\235\126\023\152\110\075 \117\307\076\051\333\155\130\203\124\075\207\175\043\005\324\344 \034\334\350\070\145\206\305\165\247\132\333\065\005\275\167\336 \273\051\067\100\005\007\303\224\122\237\312\144\335\361\033\053 \334\106\012\020\002\061\375\112\150\015\007\144\220\346\036\365  $\begin{tabular}{l} $$ \052\241\250\273\074\135\371\243\010\013\021\014\361\077\055\020 \end{tabular}$ \224\157\376\342\064\207\203\326\317\345\033\065\155\322\003\341 \260\015\250\240\252\106\047\202\066\247\025\266\010\246\102\124 \127\266\231\132\342\013\171\220\327\127\022\121\065\031\210\101 \150\045\324\067\027\204\025\373\001\162\334\225\336\122\046\040 \230\046\342\166\365\047\157\372\000\073\112\141\331\015\313\121 \223\052\375\026\006\226\247\043\232\043\110\376\121\275\266\304 \260\261\124\316\336\154\101\255\026\147\176\333\375\070\315\271 \070\116\262\301\140\313\235\027\337\130\236\172\142\262\046\217 \164\225\233\344\133\035\322\017\335\230\034\233\131\271\043\323  $\label{eq:condition} $$ \061\240\246\377\070\335\317\040\117\351\130\126\072\147\303\321 $$$ \366\231\231\235\272\066\266\200\057\210\107\117\206\277\104\072 \200\344\067\034\246\272\352\227\230\021\320\204\142\107\144\036 \252\356\100\277\064\261\234\217\116\341\362\222\117\037\216\363 \236\227\336\363\246\171\152\211\161\117\113\047\027\110\376\354 \364\120\017\117\111\175\314\105\343\275\172\100\305\101\334\141 \171\376\072\060\277\101\354\307\142\076\221\113\307\331\061\166 \102\371\367\074\143\354\046\214\163\014\175\032\035\352\250\174 \207\250\302\047\174\341\063\101\017\317\317\374\000\240\042\200

 $\label{eq:control} $$ \236\12\247\157\000\260\101\105\267\042\312\150\110\305\102\242\256\335\035\362\340\156\116\005\130\261\300\220\026\052\244\075\020\100\276\217\142\143\203\251\234\202\175\055\002\351\203\060\174\313\047\311\375\036\146\000\260\056\323\041\057\216\063\026\154\230\355\020\250\007\326\314\223\317\333\321\151\034\344\312\311\340\266\234\351\316\161\161\336\154\077\026\244\171$  END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "Trustwave Global Certification Authority"

# Issuer: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,

Inc.",L=Chicago,ST=Illinois,C=US

# Serial Number:05:f7:0e:86:da:49:f3:46:35:2e:ba:b2

# Subject: CN=Trustwave Global Certification Authority,O="Trustwave Holdings,

Inc.",L=Chicago,ST=Illinois,C=US

# Not Valid Before: Wed Aug 23 19:34:12 2017

# Not Valid After : Sat Aug 23 19:34:12 2042

# Fingerprint (SHA-256):

97:55:20:15:F5:DD:FC:3C:87:88:C0:06:94:45:55:40:88:94:45:00:84:F1:00:86:70:86:BC:1A:2B:B5:8D:C8

# Fingerprint (SHA1): 2F:8F:36:4F:E1:58:97:44:21:59:87:A5:2A:9A:D0:69:95:26:7F:B5

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA LABEL UTF8 "Trustwave Global Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \057\217\066\117\341\130\227\104\041\131\207\245\052\232\320\151$$ 

\225\046\177\265

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 370\034\030\055\057\272\137\155\241\154\274\307\253\221\307\016$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\210\061\013\060\011\006\003\125\004\006\023\002\125\123

 $\label{eq:condition} $$ \061\021\060\017\006\003\125\004\010\014\010\111\154\154\151\156$$ 

\157\151\163\061\020\060\016\006\003\125\004\007\014\007\103\150

 $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$ 

 $\label{eq:condition} $$ 147\163\054\040\111\156\143\056\061\060\057\006\003\125\004$ 

 $\\ \begin{tabular}{l} $\langle 003 \rangle 014 \rangle 050 \rangle 124 \rangle 162 \rangle 165 \rangle 163 \rangle 164 \rangle 167 \rangle 141 \rangle 166 \rangle 145 \rangle 040 \rangle 107 \rangle 154 \rangle 157 \rangle 167 \rangle 167$ 

 $\\ 142 \\ 141 \\ 154 \\ 040 \\ 103 \\ 145 \\ 162 \\ 164 \\ 151 \\ 146 \\ 151 \\ 143 \\ 141 \\ 164 \\ 151 \\ 157 \\$ 

 $\label{eq:condition} $$ \frac{156}{040}101\\165\\164\\150\\157\\162\\151\\164\\171$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\014\005\367\016\206\332\111\363\106\065\056\272\262 $$$ 

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# # Certificate "Trustwave Global ECC P256 Certification Authority" # Issuer: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US # Serial Number:0d:6a:5f:08:3f:28:5c:3e:51:95:df:5d # Subject: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US # Not Valid Before: Wed Aug 23 19:35:10 2017 # Not Valid After: Sat Aug 23 19:35:10 2042 # Fingerprint (SHA-256): 94:5B:BC:82:5E:A5:54:F4:89:D1:FD:51:A7:3D:DF:2E:A6:24:AC:70:19:A0:52:05:22:5C:22:A7:8C:CF:A8:B4 # Fingerprint (SHA1): B4:90:82:DD:45:0C:BE:8B:5B:B1:66:D3:E2:A4:08:26:CD:ED:42:CF CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA PRIVATE CK BBOOL CK FALSE CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE CKA\_LABEL UTF8 "Trustwave Global ECC P256 Certification Authority" CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509 CKA\_SUBJECT MULTILINE\_OCTAL \060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123 \061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156  $\label{eq:condition} $$ \frac{157}{151}\frac{000}{000}\frac{000}{016}\frac{000}{003}\frac{125}{004}\frac{007}{023}\frac{103}{150} $$$ \151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030 \124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156 \147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004 \003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157 \142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162 \162\151\164\171 **END** CKA ID UTF8 "0" CKA\_ISSUER MULTILINE\_OCTAL  $\label{eq:condition} $$ \060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123$ \157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150 \151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030 \124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156 \147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004 \003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157 \142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162

\162\151\164\171

 $\\ 164 \\ 151 \\ 146 \\ 151 \\ 143 \\ 141 \\ 164 \\ 151 \\ 157 \\ 156 \\ 040 \\ 101 \\ 165 \\ 164 \\ 150 \\ 157 \\ 156 \\ 164 \\ 150 \\ 157 \\ 156 \\ 164 \\ 150 \\ 157 \\ 156 \\ 164 \\ 150 \\ 157 \\ 156 \\ 164 \\ 150 \\ 157 \\ 156 \\ 164 \\ 150 \\ 157 \\ 156 \\ 164 \\ 150 \\ 157 \\ 156 \\ 164 \\ 150 \\ 157 \\ 156 \\ 164 \\ 150 \\ 157 \\ 156 \\ 164 \\ 150 \\ 157 \\ 156 \\ 164 \\ 150 \\ 157 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 156 \\ 1$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL  $$$ 002\014\015\152\137\010\077\050\134\076\121\225\337\135 END$ 

### CKA VALUE MULTILINE OCTAL

\060\202\002\140\060\202\002\007\240\003\002\001\002\002\014\015 \152\137\010\077\050\134\076\121\225\337\135\060\012\006\010\052 \206\110\316\075\004\003\002\060\201\221\061\013\060\011\006\003 \023\010\111\154\154\151\156\157\151\163\061\020\060\016\006\003 \125\004\007\023\007\103\150\151\143\141\147\157\061\041\060\037  $\label{eq:condition} $$ \006\003\125\004\012\023\030\124\162\165\163\164\167\141\166\145 $$$ \040\110\157\154\144\151\156\147\163\054\040\111\156\143\056\061 \072\060\070\006\003\125\004\003\023\061\124\162\165\163\164\167  $\label{eq:condition} $$ \frac{141\\166\\145\\040\\107\\154\\157\\142\\141\\154\\040\\105\\103\\103\\040\\120$ \062\065\066\040\103\145\162\164\151\146\151\143\141\164\151\157 \156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061 \067\060\070\062\063\061\071\063\065\061\060\132\027\015\064\062 \060\070\062\063\061\071\063\065\061\060\132\060\201\221\061\013  $\label{eq:condition} $$ \000\01\000\023\002\125\123\061\021\060\017\006 $$$ \003\125\004\010\023\010\111\154\154\151\156\157\151\163\061\020 \060\016\006\003\125\004\007\023\007\103\150\151\143\141\147\157 \167\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111 \156\143\056\061\072\060\070\006\003\125\004\003\023\061\124\162 \165\163\164\167\141\166\145\040\107\154\157\142\141\154\040\105 \103\103\040\120\062\065\066\040\103\145\162\164\151\146\151\143  $\\ 141\\164\\151\\157\\156\\040\\101\\165\\164\\150\\157\\162\\151\\164\\171\\060$ \131\060\023\006\007\052\206\110\316\075\002\001\006\010\052\206 \110\316\075\003\001\007\003\102\000\004\176\373\154\346\043\343  $\label{eq:condition} $$ 163\062\010\312\140\346\123\234\272\164\215\030\260\170\220\122$ \200\335\070\300\112\035\321\250\314\223\244\227\006\070\312\015 \025\142\306\216\001\052\145\235\252\337\064\221\056\201\301\344 \063\222\061\304\375\011\072\246\077\255\243\103\060\101\060\017 \006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060 \017\006\003\125\035\017\001\001\377\004\005\003\003\007\006\000 \060\035\006\003\125\035\016\004\026\004\024\243\101\006\254\220  $\label{eq:condition} $$ \frac{353}{165}\frac{321}{112}\frac{353}{165}\frac{3245}{112}\frac{363}{261}\frac{241}{213}\frac{367}{060}$$ \002\040\007\346\124\332\016\240\132\262\256\021\237\207\305\266 \377\151\336\045\276\370\240\267\010\363\104\316\052\337\010\041 \014\067\002\040\055\046\003\240\005\275\153\321\366\134\370\145 \314\206\155\263\234\064\110\143\204\011\305\215\167\032\342\314 \234\341\164\173

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "Trustwave Global ECC P256 Certification Authority"
# Issuer: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Serial Number:0d:6a:5f:08:3f:28:5c:3e:51:95:df:5d
# Subject: CN=Trustwave Global ECC P256 Certification Authority,O="Trustwave Holdings,
Inc.",L=Chicago,ST=Illinois,C=US
# Not Valid Before: Wed Aug 23 19:35:10 2017
# Not Valid After: Sat Aug 23 19:35:10 2042
# Fingerprint (SHA-256):
94:5B:BC:82:5E:A5:54:F4:89:D1:FD:51:A7:3D:DF:2E:A6:24:AC:70:19:A0:52:05:22:5C:22:A7:8C:CF:A8:B4
# Fingerprint (SHA1): B4:90:82:DD:45:0C:BE:8B:5B:B1:66:D3:E2:A4:08:26:CD:ED:42:CF
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global ECC P256 Certification Authority"
CKA CERT SHA1 HASH MULTILINE OCTAL
\verb| 264| 220| 202| 335| 105| 014| 276| 213| 133| 261| 146| 323| 342| 244| 010| 046|
\315\355\102\317
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\133\104\343\215\135\066\206\046\350\015\005\322\131\247\203\124
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\label{eq:condition} $$ \frac{157}{151}\frac{000}{000}\frac{000}{016}\frac{000}{003}\frac{125}{004}\frac{007}{023}\frac{103}{150} $$
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\142\141\154\040\105\103\103\040\120\062\065\066\040\103\145\162
\162\151\164\171
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\014\015\152\137\010\077\050\134\076\121\225\337\135
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Trustwave Global ECC P384 Certification Authority"
# Issuer: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings,
```

```
Inc.",L=Chicago,ST=Illinois,C=US
```

# Serial Number:08:bd:85:97:6c:99:27:a4:80:68:47:3b

# Subject: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings,

Inc.",L=Chicago,ST=Illinois,C=US

# Not Valid Before: Wed Aug 23 19:36:43 2017

# Not Valid After: Sat Aug 23 19:36:43 2042

# Fingerprint (SHA-256):

55:90:38:59:C8:C0:C3:EB:B8:75:9E:CE:4E:25:57:22:5F:F5:75:8B:BD:38:EB:D4:82:76:60:1E:1B:D5:80:97

# Fingerprint (SHA1): E7:F3:A3:C8:CF:6F:C3:04:2E:6D:0E:67:32:C5:9E:68:95:0D:5E:D2

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Trustwave Global ECC P384 Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123$ 

\157\151\163\061\020\060\016\006\003\125\004\007\023\007\103\150

 $\label{eq:condition} $$ \frac{151}143\frac{141}147\frac{57}{061}\frac{041}{060}\frac{037}{006}\frac{003}{125}\frac{004}{012}\frac{023}{030} $$$ 

\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156

\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004

\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157

\142\141\154\040\105\103\103\040\120\063\070\064\040\103\145\162

\162\151\164\171

**END** 

CKA\_ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123 \061\021\060\017\006\003\125\004\010\023\010\111\154\151\156

 $\label{eq:condition} $$ \frac{157}{151}\frac{000}{000}\frac{000}{016}\frac{000}{003}\frac{125}{004}\frac{007}{023}\frac{103}{150} $$$ 

\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030

\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156

\162\151\164\171

END

#### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\014\010\275\205\227\154\231\047\244\200\150\107\073$$ 

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\202\002\235\060\202\004\240\003\002\001\002\002\014\010 $$ \275\205\227\154\231\047\244\200\150\107\073\060\012\006\010\052 $$$ 

 $\label{eq:condition} $$ \206\110\316\075\004\003\003\060\201\221\061\013\060\011\006\003$ 

\125\004\006\023\002\125\123\061\021\060\017\006\003\125\004\010

\023\010\111\154\154\151\156\157\151\163\061\020\060\016\006\003 \125\004\007\023\007\103\150\151\143\141\147\157\061\041\060\037 \006\003\125\004\012\023\030\124\162\165\163\164\167\141\166\145  $\\ \\ 040\\ \\ 110\\ \\ 157\\ \\ 154\\ \\ 144\\ \\ 151\\ \\ 156\\ \\ 147\\ \\ 163\\ \\ 054\\ \\ 040\\ \\ 111\\ \\ 156\\ \\ 143\\ \\ 056\\ \\ 061$ \072\060\070\006\003\125\004\003\023\061\124\162\165\163\164\167  $\label{eq:condition} $$ 141\166\145\040\107\154\157\142\141\154\040\105\103\103\040\120 $$$ \063\070\064\040\103\145\162\164\151\146\151\143\141\164\151\157 \156\040\101\165\164\150\157\162\151\164\171\060\036\027\015\061 \067\060\070\062\063\061\071\063\066\064\063\132\027\015\064\062 \060\070\062\063\061\071\063\066\064\063\132\060\201\221\061\013  $\label{eq:condition} $$ \000\01\000\023\002\125\123\061\021\060\017\006 $$$  $\label{eq:condition} $$ \003\125\004\010\023\010\111\154\154\151\156\157\151\163\061\020 $$$ \060\016\006\003\125\004\007\023\007\103\150\151\143\141\147\157  $\label{eq:condition} $$ 167\141\166\145\040\110\157\154\144\151\156\147\163\054\040\111 $$$ \156\143\056\061\072\060\070\006\003\125\004\003\023\061\124\162 \103\103\040\120\063\070\064\040\103\145\162\164\151\146\151\143 \141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\060 \166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201 \004\000\042\003\142\000\004\153\332\015\165\065\010\061\107\005 \256\105\231\125\361\021\023\056\112\370\020\061\043\243\176\203  $\label{eq:condition} $$ 323\177\050\010\072\046\032\072\317\227\202\037\200\267\047\011 $$$ \217\321\216\060\304\012\233\016\254\130\004\253\367\066\175\224  $\label{eq:condition} $$ \043\244\233\012\212\213\253\353\375\071\045\146\361\136\376\214 $$$ \256\215\101\171\235\011\140\316\050\251\323\212\155\363\326\105 \324\362\230\204\070\145\240\243\103\060\101\060\017\006\003\125  $\label{eq:condition} $$ \035\023\001\001\377\004\005\060\003\001\001\377\060\017\006\003$ \125\035\017\001\001\377\004\005\003\003\007\006\000\060\035\006 \003\125\035\016\004\026\004\024\125\251\204\211\322\301\062\275  $\label{eq:condition} $$ \030\313\154\246\007\116\310\347\235\276\202\220\060\012\006\010 $$$ \052\206\110\316\075\004\003\003\003\147\000\060\144\002\060\067 \001\222\227\105\022\176\240\363\076\255\031\072\162\335\364\120 \223\003\022\276\104\322\117\101\244\214\234\235\037\243\366\302 \222\347\110\024\376\116\233\245\221\127\256\306\067\162\273\002 \060\147\045\012\261\014\136\356\251\143\222\157\345\220\013\376 \146\042\312\107\375\212\061\367\203\376\172\277\020\276\030\053  $\label{eq:condition} $$ \036\217\366\051\036\224\131\357\216\041\067\313\121\230\245\156$$ \113

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Trustwave Global ECC P384 Certification Authority"

# Issuer: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings, Inc.",L=Chicago,ST=Illinois,C=US

# Serial Number:08:bd:85:97:6c:99:27:a4:80:68:47:3b

```
Inc.",L=Chicago,ST=Illinois,C=US
# Not Valid Before: Wed Aug 23 19:36:43 2017
# Not Valid After: Sat Aug 23 19:36:43 2042
# Fingerprint (SHA-256):
55:90:38:59:C8:C0:C3:EB:B8:75:9E:CE:4E:25:57:22:5F:F5:75:8B:BD:38:EB:D4:82:76:60:1E:1B:D5:80:97
# Fingerprint (SHA1): E7:F3:A3:C8:CF:6F:C3:04:2E:6D:0E:67:32:C5:9E:68:95:0D:5E:D2
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Trustwave Global ECC P384 Certification Authority"
CKA CERT SHA1 HASH MULTILINE OCTAL
\347\363\243\310\317\157\303\004\056\155\016\147\062\305\236\150
\225\015\136\322
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\352\317\140\304\073\271\025\051\100\241\227\355\170\047\223\326
END
CKA_ISSUER MULTILINE_OCTAL
\060\201\221\061\013\060\011\006\003\125\004\006\023\002\125\123
\061\021\060\017\006\003\125\004\010\023\010\111\154\154\151\156
\label{eq:condition} $$ \frac{157}{151}\frac{000}{000}\frac{000}{016}\frac{000}{003}\frac{125}{004}\frac{007}{023}\frac{103}{150} $$
\151\143\141\147\157\061\041\060\037\006\003\125\004\012\023\030
\124\162\165\163\164\167\141\166\145\040\110\157\154\144\151\156
\147\163\054\040\111\156\143\056\061\072\060\070\006\003\125\004
\003\023\061\124\162\165\163\164\167\141\166\145\040\107\154\157
\label{eq:condition} $$ \frac{142}141\frac{54}040\frac{105}103\frac{103}040\frac{120}063\frac{070}064\frac{040}{103}\frac{145}162 $
\162\151\164\171
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\014\010\275\205\227\154\231\047\244\200\150\107\073
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "NAVER Global Root Certification Authority"
# Issuer: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR
# Serial Number:01:94:30:1e:a2:0b:dd:f5:c5:33:2a:b1:43:44:71:f8:d6:50:4d:0d
# Subject: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR
# Not Valid Before: Fri Aug 18 08:58:42 2017
# Not Valid After: Tue Aug 18 23:59:59 2037
# Fingerprint (SHA-256):
```

# Subject: CN=Trustwave Global ECC P384 Certification Authority,O="Trustwave Holdings,

88:F4:38:DC:F8:FF:D1:FA:8F:42:91:15:FF:E5:F8:2A:E1:E0:6E:0C:70:C3:75:FA:AD:71:7B:34:A4:9E:72:65

# Fingerprint (SHA1): 8F:6B:F2:A9:27:4A:DA:14:A0:C4:F4:8E:61:27:F9:C0:1E:78:5D:D1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "NAVER Global Root Certification Authority"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \000151\001\006\003\125\004\006\023\002\113\122\061\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003\125\004\003\125\116\116\1116\101\126\105\122\040\107\154\157\142\141\1154\040\122\157\157\164\040\103\145\162\151\146\151\143\141\1164\151\157\156\040\101\165\164\150\157\162\151\164\171$ 

**END** 

CKA ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061 $$ \046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040 $$ \102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122 $$ \115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003 $$ \014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122 $$ \157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157 $$ \156\040\101\165\164\150\157\162\151\164\171 $$$ 

END

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\242\060\202\003\212\240\003\002\001\002\002\002\001 \224\060\036\242\013\335\365\305\063\052\261\103\104\161\370\326 \120\115\015\060\015\006\011\052\206\110\206\367\015\001\001\014 \005\000\060\151\061\013\060\011\006\003\125\004\006\023\002\113 \122\061\046\060\044\006\003\125\004\012\014\035\116\101\126\105 \122\040\102\125\123\111\116\105\123\123\040\120\114\101\124\106 \117\122\115\040\103\157\162\160\056\061\062\060\060\006\003\125  $\\ \\004\\ \\003\\ \\014\\ \\051\\ \\1116\\ \\101\\ \\126\\ \\105\\ \\122\\ \\040\\ \\107\\ \\154\\ \\157\\ \\142\\ \\141\\ \\154$ \040\122\157\157\164\040\103\145\162\164\151\146\151\143\141\164 \151\157\156\040\101\165\164\150\157\162\151\164\171\060\036\027 \015\061\067\060\070\061\070\060\070\065\070\064\062\132\027\015 \063\067\060\070\061\070\062\063\065\071\065\071\132\060\151\061 \013\060\011\006\003\125\004\006\023\002\113\122\061\046\060\044 \006\003\125\004\012\014\035\116\101\126\105\122\040\102\125\123 \111\116\105\123\123\040\120\114\101\124\106\117\122\115\040\103 \157\162\160\056\061\062\060\060\006\003\125\004\003\014\051\116

\101\126\105\122\040\107\154\157\142\141\154\040\122\157\157\164 \040\103\145\162\164\151\146\151\143\141\164\151\157\156\040\101 \165\164\150\157\162\151\164\171\060\202\002\042\060\015\006\011 \052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000 \060\202\002\012\002\202\002\001\000\266\324\361\223\134\265\100 \211\012\253\015\220\133\120\143\256\220\224\164\027\105\162\326 \173\145\132\051\113\247\126\240\113\270\057\102\165\351\331\173 \044\132\061\145\253\027\027\321\063\072\331\021\334\100\066\207  $\label{eq:condition} $$ 37\307\152\351\046\136\131\212\167\343\350\110\234\061\026\372$ \076\221\261\312\311\243\342\237\316\041\123\243\002\066\060\313 \122\002\345\332\062\135\303\305\346\371\356\021\307\213\311\104  $\label{eq:condition} $$ \036\204\223\030\112\264\237\345\022\144\151\320\046\205\142\001 $$$ \266\311\002\035\276\203\121\273\134\332\370\255\025\152\231\367 \222\124\367\064\133\351\277\352\051\201\022\324\123\221\226\263 \221\132\335\376\220\163\050\373\060\106\265\312\010\007\307\161 \162\311\146\323\064\227\366\214\364\030\112\341\320\075\132\105 \266\151\247\051\373\043\316\210\330\022\234\000\110\250\246\017 \263\073\222\215\161\016\164\305\213\310\114\371\364\233\216\270 \074\151\355\157\073\120\057\130\355\304\260\320\034\033\152\014 \342\274\104\252\330\315\024\135\224\170\141\277\016\156\332\052 \274\057\014\013\161\246\263\026\077\234\346\371\314\237\123\065 \342\003\240\240\030\277\273\361\276\364\326\214\207\015\102\367  $\label{eq:condition} $$ 006\271\361\155\355\004\224\250\376\266\323\006\306\100\141\337 $$$ \235\235\363\124\166\316\123\072\001\246\222\101\354\004\243\217 \015\242\325\011\312\326\313\232\361\357\103\135\300\253\245\101 \317\134\123\160\160\311\210\246\055\324\153\141\163\120\046\206 \141\016\137\033\302\053\342\214\325\273\235\301\003\102\272\224  $\label{eq:condition} $$ \32\137\251\260\312\314\115\012\357\107\151\003\057\042\373\361 $$$ \050\316\277\135\120\145\250\220\155\263\164\260\010\307\254\250 \321\353\076\234\374\135\032\203\056\053\313\265\363\104\235\072  $\label{eq:condition} $$ 247\027\141\226\242\161\323\160\226\025\115\267\114\163\356\031$$ \134\305\133\076\101\376\254\165\140\073\033\143\316\000\335\332 \010\220\142\264\345\055\356\110\247\153\027\231\124\276\207\112 \343\251\136\004\114\353\020\155\124\326\357\361\350\362\142\026 \313\200\153\355\075\355\365\037\060\245\256\113\311\023\355\212 \001\001\311\270\121\130\300\146\072\261\146\113\304\325\061\002 \142\351\164\204\014\333\115\106\055\002\003\001\000\001\243\102 \060\100\060\035\006\003\125\035\016\004\026\004\024\322\237\210 \337\241\315\054\275\354\365\073\001\001\223\063\047\262\353\140 \113\060\016\006\003\125\035\017\001\001\377\004\004\003\002\001 \006\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001 \001\377\060\015\006\011\052\206\110\206\367\015\001\001\014\005  $\label{eq:condition} $$ \000\003\202\002\001\000\062\312\200\263\235\075\124\006\335\322$ \322\056\360\244\001\041\013\147\110\312\155\216\340\310\252\015  $\label{eq:condition} $$ \252\215\041\127\217\306\076\172\312\333\121\324\122\263\324\226$ \204\245\130\140\177\345\013\216\037\365\334\012\025\201\345\073 \266\267\042\057\011\234\023\026\261\154\014\065\010\155\253\143  $\label{eq:condition} $$ 162\355\334\276\354\307\127\346\060\040\161\326\327\020\301\023$ 

\125\001\214\052\103\344\101\361\317\072\172\123\222\316\242\003 \005\015\070\337\002\273\020\056\331\073\322\233\172\300\241\246 \370\265\061\346\364\165\311\271\123\231\165\107\042\132\024\025  $\label{eq:condition} $$ \307\170\033\266\235\351\014\370\033\166\361\205\204\336\241\332$  $\label{eq:condition} $$ \022\357\244\342\020\227\172\170\336\014\121\227\250\041\100\213$ \206\275\015\360\136\116\113\066\273\073\040\037\212\102\126\341 \013\032\277\173\320\042\103\054\104\214\373\345\052\264\154\034  $\label{eq:condition} $$ \034\272\224\340\023\176\041\346\232\302\313\305\102\144\264\036$  $\label{eq:condition} $$ \224\173\010\045\310\161\314\207\105\127\205\323\237\051\142\042 $$$ \203\121\227\000\030\227\167\152\230\222\311\174\140\154\337\154 \175\112\344\160\114\302\236\270\035\367\320\064\307\017\314\373 \247\377\003\276\255\160\220\332\013\335\310\155\227\137\232\177 \011\062\101\375\315\242\314\132\155\114\362\252\111\376\146\370 \351\330\065\353\016\050\036\356\110\057\072\320\171\011\070\174 \246\042\202\223\225\320\003\276\276\002\240\005\335\040\042\343 \157\035\210\064\140\306\346\012\271\011\165\013\360\007\350\151  $\label{eq:condition} $$ \226\065\307\373\043\201\216\070\071\270\105\053\103\170\242\321 $$$ \054\024\377\015\050\162\162\225\233\136\011\333\211\104\230\252 \241\111\273\161\122\362\277\366\377\047\241\066\257\270\266\167 \210\335\072\244\155\233\064\220\334\024\135\060\277\267\353\027 \344\207\267\161\320\241\327\167\025\324\102\327\362\363\061\231 \135\233\335\026\155\077\352\006\043\370\106\242\042\355\223\366 \335\232\346\052\207\261\230\124\361\042\367\153\105\343\342\216 \166\035\232\215\304\006\215\066\267\024\363\235\124\151\267\216  $\label{eq:condition} $$ \074\325\244\155\223\201\267\255\366\275\144\173\302\311\150\071 $$$ \240\222\234\315\064\206\221\220\372\144\121\235\376\376\353\245 \365\165\336\211\367\162

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "NAVER Global Root Certification Authority"
- # Issuer: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR
- # Serial Number:01:94:30:1e:a2:0b:dd:f5:c5:33:2a:b1:43:44:71:f8:d6:50:4d:0d
- # Subject: CN=NAVER Global Root Certification Authority,O=NAVER BUSINESS PLATFORM Corp.,C=KR
- # Not Valid Before: Fri Aug 18 08:58:42 2017
- # Not Valid After: Tue Aug 18 23:59:59 2037
- # Fingerprint (SHA-256):
- 88:F4:38:DC:F8:FF:D1:FA:8F:42:91:15:FF:E5:F8:2A:E1:E0:6E:0C:70:C3:75:FA:AD:71:7B:34:A4:9E:72:65
- # Fingerprint (SHA1): 8F:6B:F2:A9:27:4A:DA:14:A0:C4:F4:8E:61:27:F9:C0:1E:78:5D:D1

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "NAVER Global Root Certification Authority"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\217\153\362\251\047\112\332\024\240\304\364\216\141\047\371\300

```
\036\170\135\321
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\310\176\101\366\045\073\365\011\263\027\350\106\075\277\320\233
END
CKA ISSUER MULTILINE OCTAL
\060\151\061\013\060\011\006\003\125\004\006\023\002\113\122\061
\046\060\044\006\003\125\004\012\014\035\116\101\126\105\122\040
\102\125\123\111\116\105\123\123\040\120\114\101\124\106\117\122
\115\040\103\157\162\160\056\061\062\060\060\006\003\125\004\003
\label{eq:condition} $$ \014\051\116\101\126\105\122\040\107\154\157\142\141\154\040\122 $$
\157\157\164\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\001\224\060\036\242\013\335\365\305\063\052\261\103\104
\161\370\326\120\115\015
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
{\tt CKA\_TRUST\_STEP\_UP\_APPROVED\ CK\_BBOOL\ CK\_FALSE}
# Certificate "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"
# Issuer: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS, OID.2.5.4.97=VATES-
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES
# Serial Number:62:f6:32:6c:e5:c4:e3:68:5c:1b:62:dd:9c:2e:9d:95
# Subject: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS, OID. 2.5.4.97=VATES-
Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES
# Not Valid Before: Thu Dec 20 09:37:33 2018
# Not Valid After: Sun Dec 20 09:37:33 2043
# Fingerprint (SHA-256):
55:41:53:B1:3D:2C:F9:DD:B7:53:BF:BE:1A:4E:0A:E0:8D:0A:A4:18:70:58:FE:60:A2:B8:62:B2:E4:B8:7B:CB
# Fingerprint (SHA1): 62:FF:D9:9E:C0:65:0D:03:CE:75:93:D2:ED:3F:2D:32:C9:E3:E5:4A
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC X 509
CKA_SUBJECT MULTILINE_OCTAL
\060\170\061\013\060\011\006\003\125\004\006\023\002\105\123\061
```

\103\115\061\016\060\014\006\003\125\004\013\014\005\103\145\162 \145\163\061\030\060\026\006\003\125\004\141\014\017\126\101\124 \105\123\055\121\062\070\062\066\060\060\060\064\112\061\054\060\052 \006\003\125\004\003\014\043\101\103\040\122\101\111\132\040\106 \116\115\124\055\122\103\115\040\123\105\122\126\111\104\117\122 \105\123\040\123\105\107\125\122\117\123

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\142\366\062\154\345\304\343\150\134\033\142\335\234\056 \235\225

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\156\060\202\001\363\240\003\002\001\002\002\020\142 \366\062\154\345\304\343\150\134\033\142\335\234\056\235\225\060  $\label{eq:condition} $$ \012\006\010\052\206\110\316\075\004\003\003\006\170\061\013\060 $$$ \011\006\003\125\004\006\023\002\105\123\061\021\060\017\006\003 \014\006\003\125\004\013\014\005\103\145\162\145\163\061\030\060 \026\006\003\125\004\141\014\017\126\101\124\105\123\055\121\062 \070\062\066\060\060\064\112\061\054\060\052\006\003\125\004\003 \014\043\101\103\040\122\101\111\132\040\106\116\115\124\055\122 \103\115\040\123\105\122\126\111\104\117\122\105\123\040\123\105 \107\125\122\117\123\060\036\027\015\061\070\061\062\062\060\060 \071\063\067\063\063\132\027\015\064\063\061\062\062\060\060\071 \063\067\063\063\132\060\170\061\013\060\011\006\003\125\004\006 \023\002\105\123\061\021\060\017\006\003\125\004\012\014\010\106 \116\115\124\055\122\103\115\061\016\060\014\006\003\125\004\013 \014\005\103\145\162\145\163\061\030\060\026\006\003\125\004\141 \014\017\126\101\124\105\123\055\121\062\070\062\066\060\060\064  $\label{eq:condition} $$ \frac{112 \cdot 061 \cdot 054 \cdot 060 \cdot 052 \cdot 006 \cdot 003 \cdot 125 \cdot 004 \cdot 003 \cdot 014 \cdot 043 \cdot 101 \cdot 103 \cdot 040 \cdot 122}{120 \cdot 061 \cdot 054 \cdot 060 \cdot 052 \cdot 006 \cdot 003 \cdot 125 \cdot 004 \cdot 003 \cdot 014 \cdot 043 \cdot 101 \cdot 103 \cdot 040 \cdot 122}$ \126\111\104\117\122\105\123\040\123\105\107\125\122\117\123\060 \166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  $\label{eq:condition} $$ \004\000\042\003\142\000\004\366\272\127\123\310\312\253\337\066$$ \112\122\041\344\227\322\203\147\236\360\145\121\320\136\207\307 \107\261\131\362\127\107\233\000\002\223\104\027\151\333\102\307 \261\262\072\030\016\264\135\214\263\146\135\241\064\371\066\054 \111\333\363\106\374\263\104\151\104\023\146\375\327\305\375\257 \066\115\316\003\115\007\161\317\257\152\005\322\242\103\132\012 \122\157\001\003\116\216\213\243\102\060\100\060\017\006\003\125

 $\label{eq:control_stress} $$ \035\023\001\001\377\004\005\006\003\001\0001\377\006\0016\0006\003\\ 125\035\017\0001\001\377\004\0004\003\0002\0001\0006\006\0035\0006\003\\ 125\035\016\0004\026\0004\0224\0001\271\057\357\277\021\206\140\362\\ 117\320\101\156\253\163\037\347\322\156\111\006\0012\006\0010\052\\ 206\110\316\075\0004\0003\0003\003\151\000\060\146\0002\061\000\256\\ 112\343\053\100\303\164\021\362\225\255\026\0043\336\116\0014\032\\ 346\135\245\0044\136\153\104\173\374\070\342\117\313\234\105\027\\ 1021\114\024\0047\0046\125\071\165\112\0003\314\023\220\237\222\002\\ 1061\000\372\112\154\140\210\163\363\356\270\230\142\251\316\053\\ 302\331\212\246\160\061\035\257\260\224\114\353\117\306\343\321\\ 363\142\247\074\377\223\056\007\134\111\001\147\151\022\002\162\\ 277\347$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"

# Issuer: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-

Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

# Serial Number:62:f6:32:6c:e5:c4:e3:68:5c:1b:62:dd:9c:2e:9d:95

# Subject: CN=AC RAIZ FNMT-RCM SERVIDORES SEGUROS,OID.2.5.4.97=VATES-

Q2826004J,OU=Ceres,O=FNMT-RCM,C=ES

# Not Valid Before: Thu Dec 20 09:37:33 2018

# Not Valid After: Sun Dec 20 09:37:33 2043

# Fingerprint (SHA-256):

55:41:53:B1:3D:2C:F9:DD:B7:53:BF:BE:1A:4E:0A:E0:8D:0A:A4:18:70:58:FE:60:A2:B8:62:B2:E4:B8:7B:CB

# Fingerprint (SHA1): 62:FF:D9:9E:C0:65:0D:03:CE:75:93:D2:ED:3F:2D:32:C9:E3:E5:4A

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "AC RAIZ FNMT-RCM SERVIDORES SEGUROS"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \031\066\234\122\003\057\322\321\273\043\314\335\036\022\125\273$ 

END

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \0001700610130600111006003125\\004006023002\\1051123\\061\\021060017\\006003\\125004\\012\\014\\01010106\\116\\115\\124\\005\\122\\103\\115\\061\\016\\006003\\125\\004\\141\\014\\017\\126\\101\\124\\105\\123\\055\\121\\062\\070\\062\\066\\060\\060\\060\\064\\112\\061\\052\\1006\\003\\125\\1004\\111\\1132\\040\\106\\116\\115\\124\\055\\122\\103\\115\\040\\123\\105\\122\\126\\111\\104\\117\\122\\$ 

```
\105\123\040\123\105\107\125\122\117\123
END
CKA SERIAL NUMBER MULTILINE OCTAL
\label{eq:condition} $$ \002\020\142\366\062\154\345\304\343\150\134\033\142\335\234\056$
\235\225
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
#
# Certificate "GlobalSign Secure Mail Root R45"
# Issuer: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
# Serial Number:76:53:fe:a8:4c:50:ab:9f:8d:32:b5:1d:03:8f:57:dc
# Subject: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 18 00:00:00 2020
# Not Valid After: Sat Mar 18 00:00:00 2045
# Fingerprint (SHA-256):
31:9A:F0:A7:72:9E:6F:89:26:9C:13:1E:A6:A3:A1:6F:CD:86:38:9F:DC:AB:3C:47:A4:A6:75:C1:61:A3:F9:74
# Fingerprint (SHA1): 76:18:D1:F3:80:24:3D:52:40:C6:11:6A:AD:57:77:09:7D:81:30:A0
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA LABEL UTF8 "GlobalSign Secure Mail Root R45"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA SUBJECT MULTILINE OCTAL
\060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\label{eq:condition} $$ \031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\122\064\065
END
CKA ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061 $$
\label{eq:condition} $$ \031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\122\064\065
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\166\123\376\250\114\120\253\237\215\062\265\035\003\217
\127\334
```

#### **END**

### CKA VALUE MULTILINE OCTAL

\060\202\005\160\060\202\003\130\240\003\002\001\002\002\002\166 \123\376\250\114\120\253\237\215\062\265\035\003\217\127\334\060 \015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\122 \027\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151 \147\156\040\156\166\055\163\141\061\050\060\046\006\003\125\004  $\\ \\003\\ \\023\\ \\037\\ \\107\\ \\154\\ \\157\\ \\142\\ \\141\\ \\154\\ \\123\\ \\151\\ \\147\\ \\156\\ \\040\\ \\123\\ \\145$ \143\165\162\145\040\115\141\151\154\040\122\157\157\164\040\122 \064\065\060\036\027\015\062\060\060\063\061\070\060\060\060  $\label{eq:condition} $$ \060\060\132\027\015\064\065\060\063\061\070\060\060\060\060\060$ \060\132\060\122\061\013\060\011\006\003\125\004\006\023\002\102  $\label{eq:condition} $$ 105 \061 \031 \060 \027 \006 \003 \125 \004 \012 \023 \020 \107 \154 \157 \142$ \141\154\123\151\147\156\040\156\166\055\163\141\061\050\060\046 \006\003\125\004\003\023\037\107\154\157\142\141\154\123\151\147  $\label{eq:condition} $$ \frac{156}040\\123\\145\\143\\165\\162\\145\\040\\115\\141\\151\\154\\040\\122\\157$ \157\164\040\122\064\065\060\202\002\042\060\015\006\011\052\206 \110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202  $\label{eq:condition} $$ \002\01\002\02\001\000\334\171\314\155\006\371\155\273\340 $$$ \126\004\154\177\340\165\314\055\005\111\350\113\334\124\354\133 \167\225\162\277\177\142\235\205\251\212\044\120\137\123\345\333  $\label{eq:condition} $$ 164\157\244\051\133\023\052\011\255\232\305\057\302\367\166\073$ \241\105\106\252\103\346\044\376\053\260\157\062\160\031\106\132  $\label{eq:condition} $$ \frac{171}046\\057\\374\\075\\175\\137\\144\\313\\127\\314\\141\\141\\250\\331\\225$ \156\343\225\240\156\177\107\022\030\326\357\003\311\373\212\372 \232\275\202\025\251\125\167\113\021\117\131\340\153\303\161\363  $\label{eq:condition} $$ \014\320\124\325\201\150\076\023\271\025\056\207\212\074\104\047 $$$ \066\142\044\156\370\054\005\162\060\141\275\102\221\043\304\235 \045\247\331\124\232\024\243\061\255\200\171\014\247\143\154\230 \243\254\127\107\063\037\145\226\341\320\322\065\332\371\161\367 \241\246\045\265\101\135\337\076\140\330\321\366\237\245\362\270 \314\023\252\217\371\262\156\341\203\055\223\335\076\205\032\335 \350\261\134\046\001\313\111\205\374\374\322\324\177\205\142\206 \164\371\313\354\065\042\242\014\060\217\073\253\171\353\126\362 \372\102\363\355\371\037\105\211\100\051\255\352\222\164\352\122 \375\126\264\053\332\242\355\165\302\156\253\316\122\220\113\366  $\label{eq:condition} $$ 36\360\111\217\232\110\324\210\031\155\105\346\314\214\271\335$  $\label{eq:condition} $$ 144\140\140\002\100\370\271\317\274\130\353\075\205\271\306\012$$  $\label{eq:condition} $$ 323\234\007\146\217\307\030\071\043\106\341\074\036\243\057\120 $$$ \141\222\013\075\053\154\361\243\107\070\127\221\253\015\217\306 \235\115\004\322\046\122\134\345\245\375\052\055\026\052\001\151 \347\251\175\341\066\267\261\052\305\331\261\215\275\271\213\316 \314\213\241\076\013\110\315\120\225\064\304\330\010\131\330\153 \046\364\276\365\324\042\027\000\127\311\256\233\004\060\063\237 \013\373\337\126\242\311\156\124\166\332\261\227\142\047\131\017 \021\212\042\033\144\226\077\250\361\267\044\112\215\074\123\174 \155\203\166\075\262\046\110\163\365\104\026\001\055\011\052\216

\026\226\120\320\163\006\135\273\042\110\202\114\012\106\132\077 \200\377\134\362\362\232\254\054\010\340\326\352\360\022\070\201 \117\246\020\355\106\253\314\026\234\013\317\144\246\231\002\205 \104\147\106\255\375\115\347\002\003\001\000\001\243\102\060\100 \060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\206 \377\060\035\006\003\125\035\016\004\026\004\024\240\223\025\050 \156\356\217\010\262\065\306\236\142\171\164\247\261\016\053\173  $\label{eq:condition} $$ \000\015\006\011\052\206\110\206\367\015\001\001\014\005\000\003$ \202\002\001\000\105\012\370\321\134\254\142\201\320\004\327\266 \377\127\121\211\013\014\313\336\044\145\067\373\253\236\355\146 \364\352\014\031\151\211\270\031\261\060\126\264\331\366\367\276 \306\256\227\313\105\366\021\214\072\060\144\114\301\237\131\300  $\label{eq:condition} $$ 106\102\010\006\107\144\027\170\340\225\007\006\326\214\242\254$ \251\331\077\323\173\126\117\374\304\207\050\337\266\053\026\043 \300\237\037\133\343\326\104\136\042\117\043\004\214\065\026\265 \171\007\206\134\057\227\342\366\010\144\246\334\333\250\212\343 \244\173\167\015\321\051\223\050\040\264\123\243\113\116\137\336 \301\366\165\043\374\037\074\170\117\160\061\170\057\242\065\124 \161\004\254\310\304\155\303\366\221\261\376\315\356\104\156\201 \366\100\305\076\052\001\277\253\114\261\003\077\015\021\344\017 \322\044\343\042\210\233\237\137\107\075\121\111\340\011\067\176 \131\026\305\076\062\116\037\014\316\243\314\017\344\307\021\007  $\\ \langle 042 \rangle 057 \rangle 070 \rangle 010 \rangle 335 \rangle 133 \rangle 227 \rangle 353 \rangle 102 \rangle 154 \rangle 131 \rangle 232 \rangle 232 \rangle 356 \rangle 172 \rangle 320$ \235\337\305\333\011\103\056\012\252\031\075\153\350\152\060\172 \127\346\277\263\152\071\251\217\343\361\117\145\150\266\275\237  $\label{eq:condition} $$ \050\217\241\026\132\011\120\072\062\056\035\057\104\021\102\246 $$$ \000\346\061\230\377\055\241\017\346\244\140\126\317\171\327\262 \116\327\260\372\156\014\127\043\307\316\037\245\261\114\155\031  $\label{eq:condition} $$ \frac{111}236\\016\\177\\160\\217\\161\\077\\130\\050\\237\\165\\335\\141\\340\\072$ \267\071\266\356\227\324\065\121\373\213\111\140\310\074\146\256 \227\356\215\046\131\127\273\170\360\172\120\060\011\260\140\252 \237\116\334\311\076\036\072\334\142\223\063\260\072\124\164\157  $\label{eq:condition} $$ \054\061\105\321\153\021\062\152\150\166\366\075\366\152\023\136$ \044\230\347\352\035\232\317\170\202\007\140\367\115\020\323\201 \232\105\215\236\257\233\334\200\307\103\262\225\150\244\303\016  $\label{eq:condition} $$ \350\012\107\025\277\124\063\334\001\347\325\246\036\163\330\172$ \262\277\057\255\343\125\060\236\337\016\101\274\340\021\365\241  $\label{eq:condition} $$ \0.014\250\0.42\341\343\0.00\243\116\160\174\222\343\0.04\321\172\102$ \212\165\220\131\343\233\321\114\242\144\275\163\171\233\157\362 \263\301\366\074

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "GlobalSign Secure Mail Root R45"

```
# Subject: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 18 00:00:00 2020
# Not Valid After: Sat Mar 18 00:00:00 2045
# Fingerprint (SHA-256):
31:9A:F0:A7:72:9E:6F:89:26:9C:13:1E:A6:A3:A1:6F:CD:86:38:9F:DC:AB:3C:47:A4:A6:75:C1:61:A3:F9:74
# Fingerprint (SHA1): 76:18:D1:F3:80:24:3D:52:40:C6:11:6A:AD:57:77:09:7D:81:30:A0
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "GlobalSign Secure Mail Root R45"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\label{eq:condition} $$ 166\030\321\363\200\044\075\122\100\306\021\152\255\127\167\011 $$
\175\201\060\240
END
CKA CERT MD5 HASH MULTILINE OCTAL
\223\304\173\263\016\124\107\034\103\054\213\276\160\205\142\051
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\122\061\013\060\011\006\003\125\004\006\023\002\102\105\061 $$
\label{eq:condition} $$ \031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003
\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040
\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164
\040\122\064\065
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\166\123\376\250\114\120\253\237\215\062\265\035\003\217
\127\334
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "GlobalSign Secure Mail Root E45"
# Issuer: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE
# Serial Number:76:53:fe:aa:27:1d:95:46:5d:d6:f1:9e:e5:b8:90:0a
# Subject: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 18 00:00:00 2020
# Not Valid After: Sat Mar 18 00:00:00 2045
# Fingerprint (SHA-256):
5C:BF:6F:B8:1F:D4:17:EA:41:28:CD:6F:81:72:A3:C9:40:20:94:F7:4A:B2:ED:3A:06:B4:40:5D:04:F3:0B:19
# Fingerprint (SHA1): 18:2E:1F:32:4F:89:DF:BE:FE:88:89:F0:93:C2:C4:A0:2B:67:75:21
```

# Issuer: CN=GlobalSign Secure Mail Root R45,O=GlobalSign nv-sa,C=BE

# Serial Number:76:53:fe:a8:4c:50:ab:9f:8d:32:b5:1d:03:8f:57:dc

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "GlobalSign Secure Mail Root E45"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA SUBJECT MULTILINE OCTAL

**END** 

CKA ID UTF8 "0"

### CKA ISSUER MULTILINE OCTAL

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\166\123\376\252\047\035\225\106\135\326\361\236\345\270 \220\012

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\041\060\202\001\247\240\003\002\001\002\002\020\166 \123\376\252\047\035\225\106\135\326\361\236\345\270\220\012\060  $\label{eq:condition} $$ \012\006\010\052\206\110\316\075\004\003\003\060\122\061\013\060 $$$ \011\006\003\125\004\006\023\002\102\105\061\031\060\027\006\003 \125\004\012\023\020\107\154\157\142\141\154\123\151\147\156\040 \156\166\055\163\141\061\050\060\046\006\003\125\004\003\023\037 \107\154\157\142\141\154\123\151\147\156\040\123\145\143\165\162 \145\040\115\141\151\154\040\122\157\157\164\040\105\064\065\060 \036\027\015\062\060\060\063\061\070\060\060\060\060\060\060\132 \027\015\064\065\060\063\061\070\060\060\060\060\060\060\060\132\060 \151\147\156\040\156\166\055\163\141\061\050\060\046\006\003\125 \004\003\023\037\107\154\157\142\141\154\123\151\147\156\040\123 \145\143\165\162\145\040\115\141\151\154\040\122\157\157\164\040 \105\064\065\060\166\060\020\006\007\052\206\110\316\075\002\001 \006\005\053\201\004\000\042\003\142\000\004\371\171\213\201\107 \067\211\226\077\105\111\120\177\032\046\013\223\062\176\056\300 \300\247\010\232\303\156\217\233\076\013\042\354\067\123\267\157 \212\260\274\047\067\113\155\251\106\073\331\037\377\245\241\104

 $\label{eq:control} $$ \273\055\163\277\236\101\007\134\123\233\121\010\072\132\273\157 \070\307\026\221\170\302\112\023\151\035\202\337\132\057\000\210 \226\242\056\034\164\371\235\176\146\067\212\243\102\060\100\060 \016\006\003\125\035\017\001\001\377\004\004\003\002\001\206\060 \017\006\003\125\035\016\004\026\004\002\375\023\010\001\377\004\003\003\136\213\137 \302\100\002\375\126\267\224\114\266\036\325\246\261\024\226\060 \012\006\010\052\206\110\316\075\004\003\003\003\150\000\060\145 \002\060\023\260\276\327\161\040\076\344\253\234\316\066\022\175 \137\114\037\052\265\151\105\063\137\323\055\132\262\344\210\307 \336\012\066\102\062\171\235\246\153\272\341\371\104\052\173\212 \303\022\002\061\000\240\146\034\116\207\235\207\311\355\231\114 \033\012\356\055\140\303\067\307\035\315\265\162\260\331\306\357 \274\362\377\077\360\122\335\010\347\252\144\171\303\344\151\127 \221\057\244\313\174$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "GlobalSign Secure Mail Root E45"
- # Issuer: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE
- # Serial Number:76:53:fe:aa:27:1d:95:46:5d:d6:f1:9e:e5:b8:90:0a
- # Subject: CN=GlobalSign Secure Mail Root E45,O=GlobalSign nv-sa,C=BE
- # Not Valid Before: Wed Mar 18 00:00:00 2020
- # Not Valid After: Sat Mar 18 00:00:00 2045
- # Fingerprint (SHA-256):
- # Fingerprint (SHA1): 18:2E:1F:32:4F:89:DF:BE:FE:88:89:F0:93:C2:C4:A0:2B:67:75:21

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GlobalSign Secure Mail Root E45"

CKA CERT SHA1 HASH MULTILINE OCTAL

\030\056\037\062\117\211\337\276\376\210\211\360\223\302\304\240 \053\147\165\041

END

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \305\374\306\056\237\364\122\055\052\250\244\272\373\147\062\377$ END$ 

CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000122\061\013\060\011\006\003\125\004\006\023\002\102\105\061\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151\147\156\040\156\166\055\163\141\061\050\060\046\006\003\125\004\003\023\037\107\154\157\142\141\154\123\151\147\156\040\123\145\143\165\162\145\040\115\141\151\154\040\122\157\157\164\040\105\064\065$$ 

```
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\166\123\376\252\047\035\225\106\135\326\361\236\345\270
\220\012
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "GlobalSign Root R46"
# Issuer: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE
# Serial Number:11:d2:bb:b9:d7:23:18:9e:40:5f:0a:9d:2d:d0:df:25:67:d1
# Subject: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 20 00:00:00 2019
# Not Valid After: Tue Mar 20 00:00:00 2046
# Fingerprint (SHA-256):
4F:A3:12:6D:8D:3A:11:D1:C4:85:5A:4F:80:7C:BA:D6:CF:91:9D:3A:5A:88:B0:3B:EA:2C:63:72:D9:3C:40:C9
# Fingerprint (SHA1): 53:A2:B0:4B:CA:6B:D6:45:E6:39:8A:8E:C4:0D:D2:BF:77:C3:A2:90
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "GlobalSign Root R46"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA_SUBJECT MULTILINE_OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040
\122\157\157\164\040\122\064\066
END
CKA ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
```

\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061 \031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154 \123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003 \125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040 \122\157\157\164\040\122\064\066

END

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\022\021\322\273\271\327\043\030\236\100\137\012\235\055\320 \337\045\147\321

**END** 

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\132\060\202\003\102\240\003\002\001\002\002\022\021

\322\273\271\327\043\030\236\100\137\012\235\055\320\337\045\147 \321\060\015\006\011\052\206\110\206\367\015\001\001\014\005\000 \060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061 \031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154 \123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003 \125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040 \122\157\157\164\040\122\064\066\060\036\027\015\061\071\060\063 \062\060\060\060\060\060\060\060\132\027\015\064\066\060\063\062 \060\060\060\060\060\060\060\060\132\060\106\061\013\060\011\006\003 \125\004\006\023\002\102\105\061\031\060\027\006\003\125\004\012 \023\020\107\154\157\142\141\154\123\151\147\156\040\156\166\055 \163\141\061\034\060\032\006\003\125\004\003\023\023\107\154\157 \142\141\154\123\151\147\156\040\122\157\157\164\040\122\064\066  $\label{eq:condition} $$ \000\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001$  $\label{eq:condition} $$ \001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\012$ \000\254\254\164\062\350\263\145\345\272\355\103\046\035\246\211  $\label{eq:condition} $$ \015\105\272\051\210\262\244\035\143\335\323\301\054\011\127\211 $$$ \071\241\125\351\147\064\167\014\156\344\125\035\122\045\322\023 \153\136\341\035\251\267\175\211\062\137\015\236\237\054\172\143 \140\100\037\246\260\266\170\217\231\124\226\010\130\256\344\006 \274\142\005\002\026\277\257\250\043\003\266\224\017\274\156\154 \302\313\325\246\273\014\351\366\301\002\373\041\336\146\335\027 \253\164\102\357\360\164\057\045\364\352\153\125\133\220\333\235 \337\136\207\012\100\373\255\031\153\373\367\312\140\210\336\332 \301\217\326\256\325\177\324\074\203\356\327\026\114\203\105\063 \153\047\320\206\320\034\055\153\363\253\175\361\205\251\365\050 \322\255\357\363\204\113\034\207\374\023\243\072\162\242\132\021 \053\326\047\161\047\355\201\055\155\146\201\222\207\264\033\130 \172\314\077\012\372\106\117\115\170\134\370\053\110\343\004\204 \313\135\366\264\152\263\145\374\102\236\121\046\043\040\313\075  $\label{eq:condition} $$ \024\371\201\355\145\026\000\117\032\144\227\146\010\317\214\173$ \343\053\300\235\371\024\362\033\361\126\152\026\277\054\205\205 \315\170\070\232\353\102\152\002\064\030\203\027\116\224\126\370 \266\202\265\363\226\335\075\363\276\177\040\167\076\173\031\043 \153\054\324\162\163\103\127\175\340\370\327\151\117\027\066\004 \371\300\220\140\067\105\336\346\014\330\164\215\256\234\242\155 \164\135\102\276\006\365\331\144\156\002\020\254\211\260\114\073  $\label{eq:condition} $$ \007\115\100\176\044\305\212\230\202\171\216\244\247\202\040\215 $$$  $\label{eq:condition} $$ \043\372\047\161\311\337\306\101\164\240\115\366\221\026\334\106 $$$ \214\137\051\143\061\131\161\014\330\157\302\266\062\175\373\346 \135\123\246\176\025\374\273\165\174\135\354\370\366\027\034\354 \307\153\031\313\363\173\360\053\007\245\331\154\171\124\166\154 \235\034\246\156\016\351\171\014\250\043\152\243\337\033\060\061 \237\261\124\173\376\152\313\146\252\334\145\320\242\236\112\232  $\label{eq:condition} $$ \007\041\153\201\217\333\304\131\372\336\042\300\004\234\343\252$ \133\066\223\350\075\275\172\241\235\013\166\261\013\307\235\375 \317\230\250\006\302\370\052\243\241\203\240\267\045\162\245\002  $\label{eq:condition} $$ 343\002\003\001\000\001\243\102\060\100\060\016\006\003\125\035$$ 

\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125\035 \023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125 \035\016\004\026\004\024\003\134\253\163\201\207\250\314\260\246  $\label{eq:condition} $$ 325 \times 224 \times 42 \times 66 \times 226 \times 111 \times 377 \times 231 \times 4060 \times 15 \times 060 \times 1052 \times 206$ \110\206\367\015\001\001\014\005\000\003\202\002\001\000\174\170 \354\366\002\054\273\133\176\222\053\135\071\334\276\330\035\242 \102\063\115\371\357\244\052\073\104\151\036\254\331\105\243\116  $\\ \sqrt{074} 247 \sqrt{330} \sqrt{44} 121 \sqrt{262} 124 \sqrt{034} 223 \sqrt{116} \sqrt{304} \sqrt{357} 173 \sqrt{223} \sqrt{205} \sqrt{140}$ \046\352\011\110\340\365\273\307\351\150\322\273\152\061\161\314 \171\256\021\250\360\231\375\345\037\274\057\250\314\127\353\166 \304\041\246\107\123\125\115\150\277\005\244\356\327\046\253\142  $\label{eq:condition} $$ \32\103\067\113\342\306\265\345\262\203\031\072\307\323\333\115$$ \236\010\172\363\356\317\076\142\373\254\350\140\314\321\307\241 \134\203\105\304\105\314\363\027\153\024\311\004\002\076\322\044 \246\171\351\036\316\242\347\301\131\025\237\035\342\113\232\076 \237\166\010\055\153\330\272\127\024\332\203\352\376\214\125\351 \320\116\251\314\167\061\261\104\021\172\134\261\076\323\024\105 \025\030\142\044\023\322\313\115\316\134\203\301\066\362\020\265 \016\210\155\270\341\126\237\211\336\226\146\071\107\144\054\156  $\label{eq:condition} $$ \frac{115}256\frac{42}173\frac{277}140\frac{64}031\frac{270}126\frac{254}222\frac{254}026\frac{62}{355}$$ \255\150\125\376\230\272\323\064\336\364\311\141\303\016\206\366 \113\204\140\356\015\173\265\062\130\171\221\125\054\201\103\263  $\label{eq:condition} $$ 164\037\172\252\045\236\035\327\241\213\271\315\102\056\004\244 $$$ \146\203\115\211\065\266\154\250\066\112\171\041\170\042\320\102 \274\321\100\061\220\241\276\004\317\312\147\355\365\360\200\323 \140\311\203\052\042\005\320\007\073\122\277\014\236\252\053\371 \273\346\037\217\045\272\205\215\027\036\002\376\135\120\004\127 \317\376\055\274\357\134\300\032\253\266\237\044\306\337\163\150 \110\220\054\024\364\077\122\032\344\322\313\024\303\141\151\317 \342\371\030\305\272\063\237\024\243\004\135\271\161\367\265\224 \330\366\063\301\132\301\064\213\174\233\335\223\072\347\023\242 \160\141\237\257\217\353\330\305\165\370\063\146\324\164\147\072 \067\167\234\347\335\244\017\166\103\146\212\103\362\237\373\014 \102\170\143\321\342\017\157\173\324\241\075\164\227\205\267\110 \071\101\326\040\374\320\072\263\372\350\157\304\212\272\161\067 \276\213\227\261\170\061\117\263\347\266\003\023\316\124\235\256 \045\131\314\177\065\137\010\367\100\105\061\170\052\172

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

**END** 

<sup>#</sup> Trust for "GlobalSign Root R46"

<sup>#</sup> Issuer: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE

<sup>#</sup> Serial Number:11:d2:bb:b9:d7:23:18:9e:40:5f:0a:9d:2d:d0:df:25:67:d1

<sup>#</sup> Subject: CN=GlobalSign Root R46,O=GlobalSign nv-sa,C=BE

<sup>#</sup> Not Valid Before: Wed Mar 20 00:00:00 2019 # Not Valid After : Tue Mar 20 00:00:00 2046

```
4F:A3:12:6D:8D:3A:11:D1:C4:85:5A:4F:80:7C:BA:D6:CF:91:9D:3A:5A:88:B0:3B:EA:2C:63:72:D9:3C:40:C9
# Fingerprint (SHA1): 53:A2:B0:4B:CA:6B:D6:45:E6:39:8A:8E:C4:0D:D2:BF:77:C3:A2:90
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "GlobalSign Root R46"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\123\242\260\113\312\153\326\105\346\071\212\216\304\015\322\277
\167\303\242\220
END
CKA CERT MD5 HASH MULTILINE OCTAL
\304\024\060\344\372\146\103\224\052\152\033\044\137\031\320\357
END
CKA ISSUER MULTILINE OCTAL
\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061
\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154
\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003
\122\157\157\164\040\122\064\066
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\022\021\322\273\271\327\043\030\236\100\137\012\235\055\320
\337\045\147\321
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "GlobalSign Root E46"
# Issuer: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE
# Serial Number:11:d2:bb:ba:33:6e:d4:bc:e6:24:68:c5:0d:84:1d:98:e8:43
# Subject: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE
# Not Valid Before: Wed Mar 20 00:00:00 2019
# Not Valid After: Tue Mar 20 00:00:00 2046
# Fingerprint (SHA-256):
CB:B9:C4:4D:84:B8:04:3E:10:50:EA:31:A6:9F:51:49:55:D7:BF:D2:E2:C6:B4:93:01:01:9A:D6:1D:9F:50:58
# Fingerprint (SHA1): 39:B4:6C:D5:FE:80:06:EB:E2:2F:4A:BB:08:33:A0:AF:DB:B9:DD:84
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign Root E46"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

# Fingerprint (SHA-256):

#### CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \00106\001\006\003\125\004\006\023\002\102\105\061\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154\123\151\147\156\040\125\004\003\023\107\154\157\142\141\154\123\151\147\156\040\122\157\157\164\040\105\064\066$ 

**END** 

CKA ID UTF8 "0"

#### CKA\_ISSUER MULTILINE\_OCTAL

**END** 

### CKA SERIAL NUMBER MULTILINE OCTAL

 $\label{eq:condition} $$ \02^022\021\322\273\272\063\156\324\274\346\044\150\305\015\204\035\230\350\103$ 

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\013\060\202\001\221\240\003\002\001\002\002\022\021 \322\273\272\063\156\324\274\346\044\150\305\015\204\035\230\350 \103\060\012\006\010\052\206\110\316\075\004\003\003\060\106\061 \013\060\011\006\003\125\004\006\023\002\102\105\061\031\060\027 \006\003\125\004\012\023\020\107\154\157\142\141\154\123\151\147 \156\040\156\166\055\163\141\061\034\060\032\006\003\125\004\003 \023\023\107\154\157\142\141\154\123\151\147\156\040\122\157\157  $\label{eq:condition} $$ 164\040\105\064\066\060\036\027\015\061\071\060\063\062\060\060$ \060\060\060\060\060\132\027\015\064\066\060\063\062\060\060\060 \060\060\060\060\132\060\106\061\013\060\011\006\003\125\004\006  $\label{eq:condition} $$ \023\02\102\105\061\031\060\027\006\003\125\004\012\023\020\107 $$$ \154\157\142\141\154\123\151\147\156\040\156\166\055\163\141\061 \034\060\032\006\003\125\004\003\023\023\107\154\157\142\141\154 \123\151\147\156\040\122\157\157\164\040\105\064\066\060\166\060 \020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000 \042\003\142\000\004\234\016\261\317\267\350\236\122\167\165\064 \372\245\106\247\255\062\031\062\264\007\251\047\312\224\273\014 \322\012\020\307\332\211\260\227\014\160\023\011\001\216\330\352 \107\352\276\262\200\053\315\374\050\015\333\254\274\244\206\067 \355\160\010\000\165\352\223\013\173\056\122\234\043\150\043\006 \103\354\222\057\123\204\333\373\107\024\007\350\137\224\147\135 \311\172\201\074\040\243\102\060\100\060\016\006\003\125\035\017 \001\001\377\004\004\003\002\001\206\060\017\006\003\125\035\023 \001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035 \016\004\026\004\024\061\012\220\217\266\306\235\322\104\113\200 \265\242\346\037\261\022\117\033\225\060\012\006\010\052\206\110 \316\075\004\003\003\003\150\000\060\145\002\061\000\337\124\220 \355\233\357\213\224\002\223\027\202\231\276\263\236\054\366\013

 $\label{eq:continuous} $$\221\214\237\112\024\261\366\144\274\273\150\121\023\014\003\367\025\213\204\140\271\213\377\122\216\347\214\274\034\002\060\074\371\021\324\214\116\300\301\141\302\025\114\252\253\035\013\061\137\073\034\342\000\227\104\061\346\376\163\226\057\332\226\323\376\010\007\263\064\211\274\005\237\367\036\206\356\213\160$  END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "GlobalSign Root E46"
- # Issuer: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE
- # Serial Number:11:d2:bb:ba:33:6e:d4:bc:e6:24:68:c5:0d:84:1d:98:e8:43
- # Subject: CN=GlobalSign Root E46,O=GlobalSign nv-sa,C=BE
- # Not Valid Before: Wed Mar 20 00:00:00 2019
- # Not Valid After: Tue Mar 20 00:00:00 2046
- # Fingerprint (SHA-256):

CB:B9:C4:4D:84:B8:04:3E:10:50:EA:31:A6:9F:51:49:55:D7:BF:D2:E2:C6:B4:93:01:01:9A:D6:1D:9F:50:58

# Fingerprint (SHA1): 39:B4:6C:D5:FE:80:06:EB:E2:2F:4A:BB:08:33:A0:AF:DB:B9:DD:84

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "GlobalSign Root E46"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\071\264\154\325\376\200\006\353\342\057\112\273\010\063\240\257 \333\271\335\204

**END** 

CKA CERT MD5 HASH MULTILINE OCTAL

\265\270\146\355\336\010\203\343\311\342\001\064\006\254\121\157

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

\060\106\061\013\060\011\006\003\125\004\006\023\002\102\105\061 \\031\060\027\006\003\125\004\012\023\020\107\154\157\142\141\154 \\123\151\147\156\040\156\166\055\163\141\061\034\060\032\006\003 \\125\004\003\023\023\107\154\157\142\141\154\123\151\147\156\040 \\122\157\157\164\040\105\064\066

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\022\021\322\273\272\063\156\324\274\346\044\150\305\015\204 \035\230\350\103

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

```
# Certificate "GLOBALTRUST 2020"
```

#

- # Issuer: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT
- # Serial Number:5a:4b:bd:5a:fb:4f:8a:5b:fa:65:e5
- # Subject: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT
- # Not Valid Before: Mon Feb 10 00:00:00 2020
- # Not Valid After: Sun Jun 10 00:00:00 2040
- # Fingerprint (SHA-256):
- 9A:29:6A:51:82:D1:D4:51:A2:E3:7F:43:9B:74:DA:AF:A2:67:52:33:29:F9:0F:9A:0D:20:07:C3:34:E2:3C:9A
- # Fingerprint (SHA1): D0:67:C1:13:51:01:0C:AA:D0:C7:6A:65:37:31:16:26:4F:53:71:A2
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA PRIVATE CK BBOOL CK FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "GLOBALTRUST 2020"
- CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509
- CKA\_SUBJECT MULTILINE\_OCTAL
- \060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061
- \043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155
- \107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107

**END** 

CKA\_ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061 $$$ 

\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155

 $\label{eq:condition} $$107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107$$ 

\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\013\132\113\275\132\373\117\212\133\372\145\345$$ 

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\006\003\125\004\003\023\020\107\114\117\102\101\114\124\122\125 \123\124\040\062\060\062\060\060\202\002\042\060\015\006\011\052 \206\110\206\367\015\001\001\001\005\000\003\202\002\017\000\060 \202\002\012\002\202\002\001\000\256\056\126\255\033\034\357\366 \225\217\240\167\033\053\323\143\217\204\115\105\242\017\237\133  $\label{eq:condition} $$ 105\253\131\173\121\064\371\354\213\212\170\305\335\153\257\275$ \304\337\223\105\036\277\221\070\013\256\016\026\347\101\163\370 \333\273\321\270\121\340\313\203\073\163\070\156\167\212\017\131 \143\046\315\247\052\316\124\373\270\342\300\174\107\316\140\174 \077\262\163\362\300\031\266\212\222\207\065\015\220\050\242\344  $\label{eq:condition} $$ \025\04\143\076\272\257\356\174\136\314\246\213\120\262\070\367 $$$ \101\143\312\316\377\151\217\150\016\225\066\345\314\271\214\011 \312\113\335\061\220\226\310\314\037\375\126\226\064\333\216\034 \352\054\276\205\056\143\335\252\251\225\323\375\051\225\023\360 \310\230\223\331\055\026\107\220\021\203\242\072\042\242\050\127 \242\353\376\300\214\050\240\246\175\347\052\102\073\202\200\143 \245\143\037\031\314\174\262\146\250\302\323\155\067\157\342\176 \006\121\331\105\204\037\022\316\044\122\144\205\013\110\200\116 \207\261\042\042\060\252\353\256\276\340\002\340\100\350\260\102  $\label{eq:condition} $$ \200\03\121\252\264\176\252\104\327\103\141\363\242\153\026\211 $$$ \111\244\243\244\053\212\002\304\170\364\150\212\301\344\172\066 \261\157\033\226\033\167\111\215\324\311\006\162\217\317\123\343  $\label{eq:condition} $$ 34\027\205\040\112\334\230\047\323\221\046\053\107\036\151\007$ \257\336\242\344\344\324\153\013\263\136\174\324\044\200\107\051 \151\073\156\350\254\375\100\353\330\355\161\161\053\362\350\130 \035\353\101\227\042\305\037\324\071\320\047\217\207\343\030\364 \340\251\106\015\365\164\072\202\056\320\156\054\221\243\061\134  $\label{eq:condition} $$ \073\106\352\173\004\020\126\136\200\035\365\245\145\350\202\374$$$ \342\007\214\142\105\365\040\336\106\160\206\241\274\223\323\036 \164\246\154\260\054\367\003\014\210\014\313\324\162\123\206\274  $\label{eq:condition} $$ 140\106\363\230\152\302\361\277\103\371\160\040\167\312\067\101 $$$ \171\125\122\143\215\133\022\237\305\150\304\210\235\254\362\060 \253\267\243\061\227\147\255\217\027\017\154\307\163\355\044\224 \153\310\203\232\320\232\067\111\004\253\261\026\310\154\111\111 \055\253\241\320\214\222\362\101\112\171\041\045\333\143\327\266 \234\247\176\102\151\373\072\143\002\003\001\000\001\243\143\060 \141\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001  $\label{eq:condition} $$ \001\377\060\016\006\003\125\035\017\001\001\377\004\004\003\002$  $\label{eq:condition} $$ \001\006\003\006\003\125\035\016\004\026\004\024\334\056\037 $$$ \321\141\067\171\344\253\325\325\263\022\161\150\075\152\150\234 \042\060\037\006\003\125\035\043\004\030\060\026\200\024\334\056 \037\321\141\067\171\344\253\325\325\263\022\161\150\075\152\150 \234\042\060\015\006\011\052\206\110\206\367\015\001\001\013\005 \000\003\202\002\001\000\221\360\102\002\150\100\356\303\150\300 \124\057\337\354\142\303\303\236\212\240\061\050\252\203\216\244 \126\226\022\020\206\126\272\227\162\322\124\060\174\255\031\325 \035\150\157\373\024\102\330\215\016\363\265\321\245\343\002\102  $\label{eq:condition} $$ 136\334\350\106\130\007\065\002\060\340\274\164\112\301\103\052$ 

\377\333\032\320\260\257\154\303\375\313\263\365\177\155\003\056 \131\126\235\055\055\065\214\262\326\103\027\054\222\012\313\135  $\label{eq:condition} $$350\214\017\113\160\103\320\202\377\250\314\277\244\224\300\276$  $\label{eq:condition} $$ \207\275\212\343\223\173\306\217\233\026\235\047\145\274\172\305 $$$ \102\202\154\134\007\320\251\301\210\140\104\351\230\205\026\137 \370\217\312\001\020\316\045\303\371\140\033\240\305\227\303\323 \054\210\061\242\275\060\354\320\320\300\022\361\301\071\343\345 \365\370\326\112\335\064\315\373\157\301\117\343\000\213\126\342 \222\367\050\262\102\167\162\043\147\307\077\021\025\262\304\003 \005\276\273\021\173\012\277\250\156\347\377\130\103\317\233\147 \240\200\007\266\035\312\255\155\352\101\021\176\055\164\223\373  $\label{eq:condition} $$ 302\274\276\121\104\305\357\150\045\047\200\343\310\240\324\022$ \354\331\245\067\035\067\174\264\221\312\332\324\261\226\201\357 \150\134\166\020\111\257\176\245\067\200\261\034\122\275\063\201 \114\217\371\335\145\331\024\315\212\045\130\364\342\305\203\245 \011\220\324\154\024\143\265\100\337\353\300\374\304\130\176\015  $\label{eq:condition} $$ \024\026\207\124\047\156\126\344\160\204\270\154\062\022\176\202$ \061\103\276\327\335\174\241\255\256\326\253\040\022\357\012\303  $\label{eq:condition} $$ \020\214\111\226\065\334\013\165\136\261\117\325\117\064\016\021 $$$ \040\007\165\103\105\351\243\021\332\254\243\231\302\266\171\047 \342\271\357\310\342\366\065\051\172\164\372\305\177\202\005\142 \246\012\352\150\262\171\107\006\156\362\127\250\025\063\306\367  $\label{eq:condition} $$ \frac{170}{12}075\\102\\173\\153\\176\\376\\367\\106\\352\\321\\353\\216\\357\\210$ \150\133\350\301\331\161\176\375\144\357\377\147\107\210\130\045  $\label{eq:condition} $$ \057\076\206\007\275\373\250\345\202\250\254\245\323\151\103\315 $$$ \061\210\111\204\123\222\300\261\071\033\071\203\001\060\304\362 \251\372\320\003\275\162\067\140\126\037\066\174\275\071\221\365 \155\015\277\173\327\222

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "GLOBALTRUST 2020"
- # Issuer: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT
- # Serial Number:5a:4b:bd:5a:fb:4f:8a:5b:fa:65:e5
- # Subject: CN=GLOBALTRUST 2020,O=e-commerce monitoring GmbH,C=AT
- # Not Valid Before: Mon Feb 10 00:00:00 2020
- # Not Valid After: Sun Jun 10 00:00:00 2040
- # Fingerprint (SHA-256):
- 9A:29:6A:51:82:D1:D4:51:A2:E3:7F:43:9B:74:DA:AF:A2:67:52:33:29:F9:0F:9A:0D:20:07:C3:34:E2:3C:9A
- # Fingerprint (SHA1): D0:67:C1:13:51:01:0C:AA:D0:C7:6A:65:37:31:16:26:4F:53:71:A2

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "GLOBALTRUST 2020"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

```
\320\147\301\023\121\001\014\252\320\307\152\145\067\061\026\046
\117\123\161\242
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\212\307\157\313\155\343\314\242\361\174\203\372\016\170\327\350
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\115\061\013\060\011\006\003\125\004\006\023\002\101\124\061
\043\060\041\006\003\125\004\012\023\032\145\055\143\157\155\155
\145\162\143\145\040\155\157\156\151\164\157\162\151\156\147\040
\107\155\142\110\061\031\060\027\006\003\125\004\003\023\020\107
\114\117\102\101\114\124\122\125\123\124\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\label{eq:condition} $$ \002\013\132\113\275\132\373\117\212\133\372\145\345$
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "ANF Secure Server Root CA"
# Issuer: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de
Certificacion.C=ES.serialNumber=G63287510
# Serial Number:0d:d3:e3:bc:6c:f9:6b:b1
# Subject: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de
Certificacion, C=ES, serial Number=G63287510
# Not Valid Before: Wed Sep 04 10:00:38 2019
# Not Valid After: Tue Aug 30 10:00:38 2039
# Fingerprint (SHA-256):
FB:8F:EC:75:91:69:B9:10:6B:1E:51:16:44:C6:18:C5:13:04:37:3F:6C:06:43:08:8D:8B:EF:FD:1B:99:75:99
# Fingerprint (SHA1): 5B:6E:68:D0:CC:15:B6:A0:5F:1E:C1:5F:AE:02:FC:6B:2F:5D:6F:74
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ANF Secure Server Root CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066$$
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040
\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
```

\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040\\122\157\157\164\040\103\101

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070\065\061\060\061\013\060\0011\006\003\125\0004\006\003\125\0004\0012\023\036\101\116\106\040\101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141\143\151\157\156\061\024\060\022\006\003\125\0004\0013\023\013\101\116\106\040\103\101\101\116\106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040\122\157\157\164\040\103\101$ 

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\010\015\323\343\274\154\371\153\261

**END** 

### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\005\357\060\202\003\327\240\003\002\001\002\002\010\015$ \323\343\274\154\371\153\261\060\015\006\011\052\206\110\206\367 \015\001\001\013\005\000\060\201\204\061\022\060\020\006\003\125  $\\ \\004\\ \\005\\ \\023\\ \\011\\ \\107\\ \\066\\ \\063\\ \\062\\ \\070\\ \\067\\ \\065\\ \\061\\ \\060\\ \\061\\ \\013\\ \\060$ \011\006\003\125\004\006\023\002\105\123\061\047\060\045\006\003 \125\004\012\023\036\101\116\106\040\101\165\164\157\162\151\144 \141\144\040\144\145\040\103\145\162\164\151\146\151\143\141\143 \151\157\156\061\024\060\022\006\003\125\004\013\023\013\101\116  $\label{eq:condition} $$ 106\040\103\101\040\122\141\151\172\061\042\060\040\006\003\125 $$$ \004\003\023\031\101\116\106\040\123\145\143\165\162\145\040\123 \145\162\166\145\162\040\122\157\157\164\040\103\101\060\036\027  $\label{eq:condition} $$ \0.015\0.61\0.71\0.60\0.64\0.61\0.60\0.60\0.60\0.63\0.70\1.32\0.27\0.15 $$$ \063\071\060\070\063\060\061\060\060\060\063\070\132\060\201\204 \061\022\060\020\006\003\125\004\005\023\011\107\066\063\062\070 \067\065\061\060\061\013\060\011\006\003\125\004\006\023\002\105 \123\061\047\060\045\006\003\125\004\012\023\036\101\116\106\040 \101\165\164\157\162\151\144\141\144\040\144\145\040\103\145\162 \164\151\146\151\143\141\143\151\157\156\061\024\060\022\006\003 \125\004\013\023\013\101\116\106\040\103\101\040\122\141\151\172  $\label{eq:condition} $$ \061\042\060\040\006\003\125\004\003\023\031\101\116\106\040\123$ \145\143\165\162\145\040\123\145\162\166\145\162\040\122\157\157 \164\040\103\101\060\202\002\042\060\015\006\011\052\206\110\206 \367\015\001\001\001\005\000\003\202\002\017\000\060\202\002\012 \002\202\002\001\000\333\353\153\053\346\144\124\225\202\220\243 \162\244\031\001\235\234\013\201\137\163\111\272\247\254\363\004 \116\173\226\013\354\021\340\133\246\034\316\033\322\015\203\034 \053\270\236\035\176\105\062\140\017\007\351\167\130\176\237\152 \310\141\116\266\046\301\114\215\377\114\357\064\262\037\145\330 \271\170\365\255\251\161\271\357\117\130\035\245\336\164\040\227

\241\355\150\114\336\222\027\113\274\253\377\145\232\236\373\107 \331\127\162\363\011\241\256\166\104\023\156\234\055\104\071\274 \371\307\073\244\130\075\101\275\264\302\111\243\310\015\322\227 \057\007\145\122\000\247\156\310\257\150\354\364\024\226\266\127 \037\126\303\071\237\053\155\344\363\076\366\065\144\332\014\034 \241\204\113\057\113\113\342\054\044\235\155\223\100\353\265\043 \216\062\312\157\105\323\250\211\173\036\317\036\372\133\103\213 \315\315\250\017\152\312\014\136\271\236\107\217\360\331\266\012  $\label{eq:condition} $$ \027\063\271\043\344\167\031\175\313\112\056\222\173$ \117\057\020\167\261\215\057\150\234\142\314\340\120\370\354\221 \247\124\114\127\011\325\166\143\305\350\145\036\356\155\152\317  $\label{eq:condition} $$ \1235\372\174\117\255\140\010\375\126\231\017\025\054\173\251 $$$ \200\253\214\141\217\112\007\166\102\336\075\364\335\262\044\063 \133\270\265\243\104\311\254\177\167\074\035\043\354\202\251\246 \342\310\006\114\002\376\254\134\231\231\013\057\020\212\246\364 \177\325\207\164\015\131\111\105\366\360\161\134\071\051\326\277 \112\043\213\365\137\001\143\322\207\163\050\265\113\012\365\370 \253\202\054\176\163\045\062\035\013\143\012\027\201\000\377\266 \166\136\347\264\261\100\312\041\273\325\200\121\345\110\122\147  $\label{eq:condition} $$ \054\322\141\211\007\015\017\316\102\167\300\104\163\234\104\120 $$$ \240\333\020\012\055\225\034\201\257\344\034\345\024\036\361\066 \101\001\002\057\175\163\247\336\102\314\114\351\211\015\126\367  $\label{eq:condition} $$ \237\221\324\003\306\154\311\217\333\330\034\340\100\230\135\146$$ \231\230\200\156\055\377\001\305\316\313\106\037\254\002\306\103 \346\256\242\204\074\305\116\036\075\155\311\024\114\343\056\101 \273\312\071\277\066\074\052\031\252\101\207\116\245\316\113\062 \171\335\220\111\177\002\003\001\000\001\243\143\060\141\060\037  $\label{eq:condition} $$ \006\003\125\035\043\004\030\060\026\200\024\234\137\320\154\143 $$$ \243\137\223\312\223\230\010\255\214\207\245\054\134\301\067\060 \035\006\003\125\035\016\004\026\004\024\234\137\320\154\143\243  $\label{eq:condition} $$ 137\223\312\223\230\010\255\214\207\245\054\134\301\067\060\016 $$$ \006\003\125\035\017\001\001\377\004\004\003\002\001\206\060\017 \006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060 \015\006\011\052\206\110\206\367\015\001\001\013\005\000\003\202 \002\001\000\116\036\271\212\306\240\230\077\156\303\151\300\152 \134\111\122\254\313\053\135\170\070\301\325\124\204\237\223\360 \207\031\075\054\146\211\353\015\102\374\314\360\165\205\077\213 \364\200\135\171\345\027\147\275\065\202\342\362\074\216\175\133  $\label{eq:condition} $$ \066\313\132\200\000\051\362\316\053\054\361\217\252\155\005\223$ \154\162\307\126\353\337\120\043\050\345\105\020\075\350\147\243 \257\016\125\017\220\011\142\357\113\131\242\366\123\361\300\065 \344\057\301\044\275\171\057\116\040\042\073\375\032\040\260\244  $\label{eq:condition} $$ \016\054\160\355\164\077\270\023\225\006\121\310\350\207\046\312$ \244\133\152\026\041\222\335\163\140\236\020\030\336\074\201\352 \350\030\303\174\211\362\213\120\076\275\021\342\025\003\250\066 \175\063\001\154\110\025\327\210\220\231\004\305\314\346\007\364 \274\364\220\355\023\342\352\213\303\217\243\063\017\301\051\114 \023\116\332\025\126\161\163\162\202\120\366\232\063\174\242\261

\250\032\064\164\145\134\316\321\353\253\123\340\032\200\330\352 \072\111\344\046\060\233\345\034\212\250\251\025\062\206\231\222 \012\020\043\126\022\340\366\316\114\342\273\276\333\215\222\163  $\label{eq:condition} $$ \001\146\057\142\076\262\162\047\105\066\355\115\126\343\227\231 $$$ \377\072\065\076\245\124\112\122\131\113\140\333\356\376\170\021 \177\112\334\024\171\140\266\153\144\003\333\025\203\341\242\276 \366\043\227\120\360\011\063\066\247\161\226\045\363\271\102\175 \333\070\077\054\130\254\350\102\341\016\330\323\073\114\056\202 \351\203\056\153\061\331\335\107\206\117\155\227\221\056\117\342 \050\161\065\026\321\362\163\376\045\053\007\107\044\143\047\310 \370\366\331\153\374\022\061\126\010\300\123\102\257\234\320\063 \176\374\006\360\061\104\003\024\361\130\352\362\152\015\251\021 \262\203\276\305\032\277\007\352\131\334\243\210\065\357\234\166 \062\074\115\006\042\316\025\345\335\236\330\217\332\336\322\304  $\label{eq:condition} $$ \071\345\027\201\317\070\107\353\177\210\155\131\033\337\237\102 $$$ \024\256\176\317\250\260\146\145\332\067\257\237\252\075\352\050 \266\336\325\061\130\026\202\133\352\273\031\165\002\163\032\312 \110\032\041\223\220\012\216\223\204\247\175\073\043\030\222\211 \240\215\254

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "ANF Secure Server Root CA"

# Issuer: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de

Certificacion, C=ES, serial Number=G63287510

# Serial Number:0d:d3:e3:bc:6c:f9:6b:b1

# Subject: CN=ANF Secure Server Root CA,OU=ANF CA Raiz,O=ANF Autoridad de

Certificacion, C=ES, serial Number=G63287510

# Not Valid Before: Wed Sep 04 10:00:38 2019

# Not Valid After: Tue Aug 30 10:00:38 2039

# Fingerprint (SHA-256):

FB:8F:EC:75:91:69:B9:10:6B:1E:51:16:44:C6:18:C5:13:04:37:3F:6C:06:43:08:8D:8B:EF:FD:1B:99:75:99

# Fingerprint (SHA1): 5B:6E:68:D0:CC:15:B6:A0:5F:1E:C1:5F:AE:02:FC:6B:2F:5D:6F:74

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "ANF Secure Server Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$133\156\150\320\314\025\266\240\137\036\301\137\256\002\374\153$$ 

 $\ \ \, \backslash 057\backslash 135\backslash 157\backslash 164$ 

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\\ \\ 046 \\ 246 \\ 104 \\ 132 \\ 331 \\ 257 \\ 116 \\ 057 \\ 262 \\ 035 \\ 266 \\ 145 \\ 260 \\ 116 \\ 350 \\ 226$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

```
\060\201\204\061\022\060\020\006\003\125\004\005\023\011\107\066
\063\062\070\067\065\061\060\061\013\060\011\006\003\125\004\006
\023\002\105\123\061\047\060\045\006\003\125\004\012\023\036\101
\022\006\003\125\004\013\023\013\101\116\106\040\103\101\040\122
\141\151\172\061\042\060\040\006\003\125\004\003\023\031\101\116
\label{eq:condition} $$ 106\040\123\145\143\165\162\145\040\123\145\162\166\145\162\040$
\122\157\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\label{eq:condition} $$ \002\010\015\323\343\274\154\371\153\261$
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Certum EC-384 CA"
# Issuer: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
# Serial Number:78:8f:27:5c:81:12:52:20:a5:04:d0:2d:dd:ba:73:f4
# Subject: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
# Not Valid Before: Mon Mar 26 07:24:54 2018
# Not Valid After: Thu Mar 26 07:24:54 2043
# Fingerprint (SHA-256):
6B:32:80:85:62:53:18:AA:50:D1:73:C9:8D:8B:DA:09:D5:7E:27:41:3D:11:4C:F7:87:A0:F5:D0:6C:03:0C:F6
# Fingerprint (SHA1): F3:3E:78:3C:AC:DF:F4:A2:CC:AC:67:55:69:56:D7:E5:16:3C:E1:ED
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA LABEL UTF8 "Certum EC-384 CA"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA SUBJECT MULTILINE OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\\ \\ 040\\ \\ 104\\ \\ 141\\ \\ 164\\ \\ 141\\ \\ 040\\ \\ 123\\ \\ 171\\ \\ 163\\ \\ 164\\ \\ 145\\ \\ 155\\ \\ 163\\ \\ 040\\ \\ 123\\ \\ 056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027\006
\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055
\063\070\064\040\103\101
END
CKA_ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061
```

 $\label{eq:control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_control_co$ 

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\020\170\217\047\134\201\022\122\040\245\004\320\055\335\272\163\364$ 

**END** 

### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\002\145\060\202\001\353\240\003\002\001\002\002\002\170$ \217\047\134\201\022\122\040\245\004\320\055\335\272\163\364\060 \012\006\010\052\206\110\316\075\004\003\003\060\164\061\013\060  $\label{eq:condition} $$ \004\003\125\004\006\023\002\120\114\061\041\060\037\006\003$ \125\004\012\023\030\101\163\163\145\143\157\040\104\141\164\141 \040\123\171\163\164\145\155\163\040\123\056\101\056\061\047\060  $\label{eq:condition} $$ 0.045 \times 0.03 \times 1.25 \times 0.04 \times 0.13 \times 0.03 \times 1.03 \times 1.045 \times 0.045 \times 0.03 \times 1.03 \times 0.03 \times 0$ \145\162\164\151\146\151\143\141\164\151\157\156\040\101\165\164 \150\157\162\151\164\171\061\031\060\027\006\003\125\004\003\023  $\label{eq:condition} $$ \020\103\145\162\164\165\155\040\105\103\055\063\070\064\040\103$ \101\060\036\027\015\061\070\060\063\062\066\060\067\062\064\065 \064\132\027\015\064\063\060\063\062\066\060\067\062\064\065\064 \132\060\164\061\013\060\011\006\003\125\004\006\023\002\120\114 \061\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143  $\label{eq:condition} $$ \frac{157}040\\104\\141\\164\\141\\040\\123\\171\\163\\164\\145\\155\\163\\040\\123$ \056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145 \162\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151 \157\156\040\101\165\164\150\157\162\151\164\171\061\031\060\027 \006\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103 \055\063\070\064\040\103\101\060\166\060\020\006\007\052\206\110 \316\075\002\001\006\005\053\201\004\000\042\003\142\000\004\304 \050\216\253\030\133\152\276\156\144\067\143\344\315\354\253\072 \367\314\241\270\016\202\111\327\206\051\237\241\224\362\343\140 \170\230\201\170\006\115\362\354\232\016\127\140\203\237\264\346 \027\057\032\263\135\002\133\211\043\074\302\021\005\052\247\210 \337\246\037\050\304\360\124\303\271\174\267\123\255\353\302\243 \102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060 \003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\215  $\label{eq:condition} $$ \006\146\164\044\166\072\363\211\367\274\326\275\107\175\057\274$$$ \020\137\113\060\016\006\003\125\035\017\001\001\377\004\004\003  $\label{eq:condition} $$ \002\001\006\060\012\006\010\052\206\110\316\075\004\003\003\003$ \150\000\060\145\002\060\003\125\055\246\346\030\304\174\357\311 \120\156\301\047\017\234\207\257\156\325\033\010\030\275\222\051 \301\357\224\221\170\322\072\034\125\211\142\345\033\011\036\272

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Certum EC-384 CA"
- # Issuer: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
- # Serial Number:78:8f:27:5c:81:12:52:20:a5:04:d0:2d:dd:ba:73:f4
- # Subject: CN=Certum EC-384 CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
- # Not Valid Before: Mon Mar 26 07:24:54 2018
- # Not Valid After: Thu Mar 26 07:24:54 2043
- # Fingerprint (SHA-256):
- 6B:32:80:85:62:53:18:AA:50:D1:73:C9:8D:8B:DA:09:D5:7E:27:41:3D:11:4C:F7:87:A0:F5:D0:6C:03:0C:F6
- # Fingerprint (SHA1): F3:3E:78:3C:AC:DF:F4:A2:CC:AC:67:55:69:56:D7:E5:16:3C:E1:ED

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum EC-384 CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 363 \times 170 \times 170$ 

\026\074\341\355

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\266\145\263\226\140\227\022\241\354\116\341\075\243\306\311\361

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\164\061\013\060\011\006\003\125\004\006\023\002\120\114\061\$ 

 $\\ \\ 041\\ \\ 060\\ \\ 037\\ \\ 006\\ \\ 003\\ \\ 125\\ \\ 004\\ \\ 012\\ \\ 023\\ \\ 030\\ \\ 101\\ \\ 163\\ \\ 145\\ \\ 143\\ \\ 157$ 

\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056

 $\label{eq:condition} $$ 101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162$$ 

\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157

 $\label{eq:condition} $$ \frac{156}040\\101\\165\\164\\150\\157\\162\\151\\164\\171\\061\\031\\060\\027\\006$ 

\003\125\004\003\023\020\103\145\162\164\165\155\040\105\103\055

 $063\070\064\040\103\101$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\020\170\217\047\134\201\022\122\040\245\004\320\055\335\272 $$$ 

\163\364

END

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

# Certificate "Certum Trusted Root CA"

#

- # Issuer: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
- # Serial Number:1e:bf:59:50:b8:c9:80:37:4c:06:f7:eb:55:4f:b5:ed
- # Subject: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL
- # Not Valid Before: Fri Mar 16 12:10:13 2018
- # Not Valid After: Mon Mar 16 12:10:13 2043
- # Fingerprint (SHA-256):

FE:76:96:57:38:55:77:3E:37:A9:5E:7A:D4:D9:CC:96:C3:01:57:C1:5D:31:76:5B:A9:B1:57:04:E1:AE:78:FD

# Fingerprint (SHA1): C8:83:44:C0:18:AE:9F:CC:F1:87:B7:8F:22:D1:C5:D7:45:84:BA:E5

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certum Trusted Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061 $$$ 

\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157

\040\104\141\164\141\040\123\171\163\164\145\155\163\040\123\056

 $\label{eq:condition} $$ 101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162$$ 

\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157

\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006

\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165

\163\164\145\144\040\122\157\157\164\040\103\101

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157\040\104\141\164\141\040\123\171\163\164\145\155\163\040\1123\056\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162\164\151\143\141\164\151\157\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165\163\164\145\144\040\122\157\157\164\040\103\101$ 

END

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\036\277\131\120\270\311\200\067\114\006\367\353\125\117 \265\355

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\300\060\202\003\250\240\003\002\001\002\002\020\036 \277\131\120\270\311\200\067\114\006\367\353\125\117\265\355\060 \015\006\011\052\206\110\206\367\015\001\001\015\005\000\060\172 \061\013\060\011\006\003\125\004\006\023\002\120\114\061\041\060

\037\006\003\125\004\012\023\030\101\163\163\145\143\157\040\104 \141\164\141\040\123\171\163\164\145\155\163\040\123\056\101\056 \061\047\060\045\006\003\125\004\013\023\036\103\145\162\164\165 \155\040\103\145\162\164\151\146\151\143\141\164\151\157\156\040 \101\165\164\150\157\162\151\164\171\061\037\060\035\006\003\125 \004\003\023\026\103\145\162\164\165\155\040\124\162\165\163\164 \145\144\040\122\157\157\164\040\103\101\060\036\027\015\061\070 \060\063\061\066\061\062\061\060\061\063\132\027\015\064\063\060  $\label{eq:condition} $$ \063\061\066\061\062\061\060\061\063\132\060\172\061\013\060\011 $$$ \006\003\125\004\006\023\002\120\114\061\041\060\037\006\003\125 \004\012\023\030\101\163\163\145\143\157\040\104\141\164\141\040 \123\171\163\164\145\155\163\040\123\056\101\056\061\047\060\045 \006\003\125\004\013\023\036\103\145\162\164\165\155\040\103\145 \157\162\151\164\171\061\037\060\035\006\003\125\004\003\023\026 \103\145\162\164\165\155\040\124\162\165\163\164\145\144\040\122  $\label{eq:condition} $$ \frac{157}{157}\frac{64}{040}\frac{103}{101}\frac{060}{202}\frac{002}{042}\frac{060}{015}\frac{011}{052}\frac{206}{206} $$$ \110\206\367\015\001\001\001\005\000\003\202\002\017\000\060\202 \002\012\002\202\002\001\000\321\055\216\273\267\066\352\155\067 \221\237\116\223\247\005\344\051\003\045\316\034\202\367\174\231 \237\101\006\315\355\243\272\300\333\011\054\301\174\337\051\176 \113\145\057\223\247\324\001\153\003\050\030\243\330\235\005\301  $\label{eq:condition} $$ \052\330\105\361\221\336\337\073\320\200\002\214\317\070\017\352 $$$ \247\134\170\021\244\301\310\205\134\045\323\323\262\347\045\317 \021\124\227\253\065\300\036\166\034\357\000\123\237\071\334\024 \245\054\042\045\263\162\162\374\215\263\345\076\010\036\024\052 \067\013\210\074\312\260\364\310\302\241\256\274\301\276\051\147 \125\342\374\255\131\134\376\275\127\054\260\220\215\302\355\067 \266\174\231\210\265\325\003\232\075\025\015\075\072\250\250\105 \360\225\116\045\131\035\315\230\151\273\323\314\062\311\215\357 \201\376\255\175\211\273\272\140\023\312\145\225\147\240\363\031 \366\003\126\324\152\323\047\342\241\255\203\360\112\022\042\167 \034\005\163\342\031\161\102\300\354\165\106\232\220\130\340\152 \216\053\245\106\060\004\216\031\262\027\343\276\251\272\177\126 \361\044\003\327\262\041\050\166\016\066\060\114\171\325\101\232 \232\250\270\065\272\014\072\362\104\033\040\210\367\305\045\327 \075\306\343\076\103\335\207\376\304\352\365\123\076\114\145\377  $\label{eq:condition} $$ \073\112\313\170\132\153\027\137\015\307\303\117\116\232\052\242 $$$  $\label{eq:condition} $$ \frac{355}{127}\frac{042}{342}\frac{232}{077}\frac{221}{064}\frac{4175}{125}\frac{343}{214} $$$ \225\067\323\032\360\011\053\054\322\311\215\264\015\000\253\147 \051\050\330\001\365\031\004\266\035\276\166\376\162\134\304\205 \312\322\200\101\337\005\250\243\325\204\220\117\013\363\340\077 \233\031\322\067\211\077\362\173\122\034\214\366\341\367\074\007 \227\214\016\242\131\201\014\262\220\075\323\343\131\106\355\017 \251\247\336\200\153\132\252\007\266\031\313\274\127\363\227\041 \172\014\261\053\164\076\353\332\247\147\055\114\304\230\236\066 \011\166\146\146\374\032\077\352\110\124\034\276\060\275\200\120 \277\174\265\316\000\366\014\141\331\347\044\003\340\343\001\201

\016\275\330\205\064\210\275\262\066\250\173\134\010\345\104\200 \214\157\370\057\325\041\312\035\034\320\373\304\265\207\321\072 \116\307\166\265\065\110\265\002\003\001\000\001\243\102\060\100  $\label{eq:condition} $$ \000\017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\$ \377\060\035\006\003\125\035\016\004\026\004\024\214\373\034\165  $\label{eq:condition} $$ \274\002\323\237\116\056\110\331\371\140\124\252\304\263\117\372$ \060\016\006\003\125\035\017\001\001\377\004\004\003\002\001\006  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\015\005\000\003$ \202\002\001\000\110\242\325\000\013\056\320\077\274\034\325\265 \124\111\036\132\153\364\344\362\340\100\067\340\314\024\173\271 \311\372\065\265\165\027\223\152\005\151\205\234\315\117\031\170 \133\031\201\363\143\076\303\316\133\217\365\057\136\001\166\023 \077\054\000\271\315\226\122\071\111\155\004\116\305\351\017\206  $\label{eq:condition} $$ \015\341\372\263\137\202\022\361\072\316\146\006\044\064\053\350 $$$  $\label{eq:condition} $$ \frac{314}{312}\frac{347}{151}\frac{334}{207}\frac{302}{64}\frac{327}{171}\frac{321}{323}\frac{167}{270}\frac{252}{252} $$$ \131\130\376\235\046\372\070\206\076\235\212\207\144\127\345\027  $\label{eq:condition} $$ \072\342\371\215\271\343\063\170\301\220\330\270\335\267\203\121 $$$ \344\304\314\043\325\006\174\346\121\323\315\064\061\300\366\106 \273\013\255\374\075\020\005\052\073\112\221\045\356\214\324\204  $\label{eq:condition} $$ \207\200\052\274\011\214\252\072\023\137\350\064\171\120\301\020 $$$ \031\371\323\050\036\324\321\121\060\051\263\256\220\147\326\037 \012\143\261\305\251\306\102\061\143\027\224\357\151\313\057\372 \214\024\175\304\103\030\211\331\360\062\100\346\200\342\106\137 \345\343\301\000\131\250\371\350\040\274\211\054\016\107\064\013  $\label{eq:condition} $$ \frac{352}127\302\123\066\374\247\324\257\061\315\376\002\345\165\372}{3} $$$ \271\047\011\371\363\365\073\312\175\237\251\042\313\210\311\252 \321\107\075\066\167\250\131\144\153\047\317\357\047\301\343\044 \265\206\367\256\176\062\115\260\171\150\321\071\350\220\130\303 \203\274\017\054\326\227\353\316\014\341\040\307\332\267\076\303 \077\277\057\334\064\244\373\053\041\315\147\217\113\364\343\352  $\label{eq:condition} $\324\077\347\117\272\271\245\223\105\034\146\037\041\372\144\136$$ \157\340\166\224\062\313\165\365\156\345\366\217\307\270\244\314 \250\226\175\144\373\044\132\112\003\154\153\070\306\350\003\103 \232\367\127\271\263\051\151\223\070\364\003\362\273\373\202\153 \007\040\321\122\037\232\144\002\173\230\146\333\134\115\132\017 \320\204\225\240\074\024\103\006\312\312\333\270\101\066\332\152 \104\147\207\257\257\343\105\021\025\151\010\262\276\026\071\227 \044\157\022\105\321\147\135\011\250\311\025\332\372\322\246\137  $\label{eq:condition} $$ \023\141\037\277\205\254\264\255\255\005\224\010\203\036\165\027 $$$ \323\161\073\223\120\043\131\240\355\074\221\124\235\166\000\305 \303\270\070\333

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Certum Trusted Root CA"

<sup>#</sup> Issuer: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

```
# Not Valid Before: Fri Mar 16 12:10:13 2018
# Not Valid After: Mon Mar 16 12:10:13 2043
# Fingerprint (SHA-256):
FE:76:96:57:38:55:77:3E:37:A9:5E:7A:D4:D9:CC:96:C3:01:57:C1:5D:31:76:5B:A9:B1:57:04:E1:AE:78:FD
# Fingerprint (SHA1): C8:83:44:C0:18:AE:9F:CC:F1:87:B7:8F:22:D1:C5:D7:45:84:BA:E5
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certum Trusted Root CA"
CKA CERT SHA1 HASH MULTILINE OCTAL
\310\203\104\300\030\256\237\314\361\207\267\217\042\321\305\327
\105\204\272\345
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\121\341\302\347\376\114\204\257\131\016\057\364\124\157\352\051
END
CKA_ISSUER MULTILINE_OCTAL
\060\172\061\013\060\011\006\003\125\004\006\023\002\120\114\061
\041\060\037\006\003\125\004\012\023\030\101\163\163\145\143\157
\\ \\ 040\\ \\ 104\\ \\ 141\\ \\ 164\\ \\ 141\\ \\ 040\\ \\ 123\\ \\ 171\\ \\ 163\\ \\ 164\\ \\ 145\\ \\ 155\\ \\ 163\\ \\ 040\\ \\ 123\\ \\ 056
\101\056\061\047\060\045\006\003\125\004\013\023\036\103\145\162
\164\165\155\040\103\145\162\164\151\146\151\143\141\164\151\157
\156\040\101\165\164\150\157\162\151\164\171\061\037\060\035\006
\003\125\004\003\023\026\103\145\162\164\165\155\040\124\162\165
\163\164\145\144\040\122\157\157\164\040\103\101
END
CKA SERIAL NUMBER MULTILINE OCTAL
\label{eq:condition} $$ \002\020\036\277\131\120\270\311\200\067\114\006\367\353\125\117 $$
\265\355
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "TunTrust Root CA"
# Issuer: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN
# Serial Number:13:02:d5:e2:40:4c:92:46:86:16:67:5d:b4:bb:bb:b2:6b:3e:fc:13
# Subject: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN
# Not Valid Before: Fri Apr 26 08:57:56 2019
# Not Valid After: Tue Apr 26 08:57:56 2044
# Fingerprint (SHA-256):
2E:44:10:2A:B5:8C:B8:54:19:45:1C:8E:19:D9:AC:F3:66:2C:AF:BC:61:4B:6A:53:96:0A:30:F7:D0:E2:EB:41
```

# Subject: CN=Certum Trusted Root CA,OU=Certum Certification Authority,O=Asseco Data Systems S.A.,C=PL

# Serial Number:1e:bf:59:50:b8:c9:80:37:4c:06:f7:eb:55:4f:b5:ed

# Fingerprint (SHA1): CF:E9:70:84:0F:E0:73:0F:9D:F6:0C:7F:2C:4B:EE:20:46:34:9C:BB

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA LABEL UTF8 "TunTrust Root CA"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\024\023\002\325\342\100\114\222\106\206\026\147\135\264\273 \273\262\153\076\374\023

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\263\060\202\003\233\240\003\002\001\002\002\024\023 \002\325\342\100\114\222\106\206\026\147\135\264\273\273\262\153 \076\374\023\060\015\006\011\052\206\110\206\367\015\001\001\013 \005\000\060\141\061\013\060\011\006\003\125\004\006\023\002\124 \116\061\067\060\065\006\003\125\004\012\014\056\101\147\145\156 \143\145\040\116\141\164\151\157\156\141\154\145\040\144\145\040 \103\145\162\164\151\146\151\143\141\164\151\157\156\040\105\154 \145\143\164\162\157\156\151\161\165\145\061\031\060\027\006\003 \157\164\040\103\101\060\036\027\015\061\071\060\064\062\066\060 \070\065\067\065\066\132\027\015\064\064\060\064\062\066\060\070 \065\067\065\066\132\060\141\061\013\060\011\006\003\125\004\006 \023\002\124\116\061\067\060\065\006\003\125\004\012\014\056\101 \147\145\156\143\145\040\116\141\164\151\157\156\141\154\145\040 \144\145\040\103\145\162\164\151\146\151\143\141\164\151\157\156 \040\105\154\145\143\164\162\157\156\151\161\165\145\061\031\060 \027\006\003\125\004\003\014\020\124\165\156\124\162\165\163\164

\040\122\157\157\164\040\103\101\060\202\002\042\060\015\006\011 \052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000 \060\202\002\012\002\202\002\001\000\303\315\323\374\275\004\123  $\label{eq:condition} $$ 35 \cdot 014 \cdot 040 \cdot 072 \cdot 325 \cdot 210 \cdot 056 \cdot 005 \cdot 113 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 367 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 131 \cdot 101 \cdot 365 \cdot 203 \cdot 202 \cdot 176 \cdot 101 \cdot$ \237\236\236\143\350\163\332\366\006\251\117\037\264\371\013\037 \071\214\232\040\320\176\006\324\354\064\331\206\274\165\133\207 \210\360\322\331\324\243\012\262\154\033\353\111\054\076\254\135 \330\224\003\240\354\064\345\060\304\065\175\373\046\115\033\156 \060\124\330\365\200\105\234\071\255\234\311\045\004\115\232\220 \076\116\100\156\212\153\315\051\147\306\314\055\340\164\350\005 \127\012\110\120\372\172\103\332\176\354\133\232\016\142\166\376 \352\235\035\205\162\354\021\273\065\350\037\047\277\301\241\307 \273\110\026\335\126\327\314\116\240\341\271\254\333\325\203\031  $\label{eq:condition} $$ \032\205\321\224\227\327\312\243\145\013\363\070\371\002\256\335 $$$  $\label{eq:condition} $$ \366\147\317\311\077\365\212\054\107\032\231\157\005\015\375\320 $$$ \035\202\061\374\051\314\000\130\227\221\114\200\000\034\063\205 \226\057\313\101\302\213\020\204\303\011\044\211\037\265\017\331 \331\167\107\030\222\224\140\134\307\231\003\074\376\367\225\247 \175\120\241\200\302\251\203\255\130\226\125\041\333\206\131\324 \257\306\274\335\201\156\007\333\140\142\376\354\020\156\332\150 \001\364\203\033\251\076\242\133\043\327\144\306\337\334\242\175 \330\113\272\202\322\121\370\146\277\006\106\344\171\052\046\066  $\label{eq:condition} $$ \frac{171}{217}037\frac{116}{231}035\frac{262}{217}014\frac{016}{034}\frac{377}{311}135\frac{300}{375} $$$ \220\020\246\261\067\363\315\072\044\156\264\205\220\277\200\271 \014\214\325\233\326\310\361\126\077\032\200\211\172\251\342\033 \062\121\054\076\362\337\173\366\135\172\051\031\216\345\310\275 \066\161\213\135\114\302\035\077\255\130\242\317\075\160\115\246  $\label{eq:condition} $$ 120\230\045\334\043\371\270\130\101\010\161\277\117\270\204\240 $$$ \217\000\124\025\374\221\155\130\247\226\073\353\113\226\047\315 \153\242\241\206\254\015\174\124\346\146\114\146\137\220\276\041 \232\002\106\055\344\203\302\200\271\317\113\076\350\177\074\001 \354\217\136\315\177\322\050\102\001\225\212\342\227\075\020\041 \175\366\235\034\305\064\241\354\054\016\012\122\054\022\125\160 \044\075\313\302\024\065\103\135\047\116\276\300\275\252\174\226 \347\374\236\141\255\104\323\000\227\002\003\001\000\001\243\143 \060\141\060\035\006\003\125\035\016\004\026\004\024\006\232\233 \037\123\175\361\365\244\310\323\206\076\241\163\131\264\367\104  $\\ \\ 041\\ \\ 060\\ \\ 017\\ \\ 006\\ \\ 003\\ \\ 125\\ \\ 035\\ \\ 023\\ \\ 001\\ \\ 001\\ \\ 377\\ \\ 004\\ \\ 005\\ \\ 060\\ \\ 003\\ \\ 001\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011\\ \\ 011$ \001\377\060\037\006\003\125\035\043\004\030\060\026\200\024\006 \232\233\037\123\175\361\365\244\310\323\206\076\241\163\131\264 \367\104\041\060\016\006\003\125\035\017\001\001\377\004\004\003 \002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013 \005\000\003\202\002\001\000\252\005\156\266\335\025\311\277\263 \306\040\366\006\107\260\206\223\045\323\215\271\310\000\077\227 \365\122\047\210\161\311\164\375\353\312\144\333\133\357\036\135 \272\277\321\353\356\134\151\272\026\310\363\271\217\323\066\056 \100\111\007\015\131\336\213\020\260\111\005\342\377\221\077\113 \267\335\002\216\370\201\050\134\314\334\155\257\137\024\234\175

\130\170\015\366\200\011\271\351\016\227\051\031\270\267\353\370 \026\313\125\022\344\306\175\273\304\354\370\265\034\116\076\147 \277\305\137\033\155\155\107\050\252\004\130\141\326\166\277\042  $\label{eq:condition} $$ \frac{320\\007\\152\\247\\144\\123\\360\\227\\215\\235\\200\\077\\273\\301\\007$ \333\145\257\346\233\062\232\303\124\223\304\034\010\303\104\373 \173\143\021\103\321\152\032\141\152\171\155\220\117\051\216\107 \005\301\022\151\151\326\306\066\061\341\374\372\200\272\134\117 \304\353\267\062\254\370\165\141\027\327\020\031\271\361\322\011 \357\172\102\235\133\132\013\324\306\225\116\052\316\377\007\327 \117\176\030\006\210\361\031\265\331\230\273\256\161\304\034\347 \164\131\130\357\014\211\317\213\037\165\223\032\004\024\222\110  $\label{eq:condition} $$ \frac{120}{251}\frac{35}{127}\frac{051}{000}\frac{026}{343}\frac{343}{066}\frac{34}{310}\frac{370}{277}\frac{360}{063}\frac{325}{325}$ \101\017\304\314\074\335\351\063\103\001\221\020\053\036\321\271 \135\315\062\031\213\217\214\040\167\327\042\304\102\334\204\026 \233\045\155\350\264\125\161\177\260\174\263\323\161\111\271\317 \122\244\004\077\334\075\240\273\257\063\236\012\060\140\216\333 \235\135\224\250\275\140\347\142\200\166\201\203\014\214\314\060 \106\111\342\014\322\250\257\353\141\161\357\347\042\142\251\367 \134\144\154\237\026\214\147\066\047\105\365\011\173\277\366\020 \012\361\260\215\124\103\214\004\272\243\077\357\342\065\307\371 \164\340\157\064\101\320\277\163\145\127\040\371\233\147\172\146 \150\044\116\200\145\275\020\231\006\131\362\145\257\270\306\107 \273\375\220\170\213\101\163\056\257\125\037\334\073\222\162\156 \204\323\320\141\114\015\314\166\127\342\055\205\042\025\066\015 \167\332\203\104\213\236\125\050\300\213\130\323\220\076\116\033 \000\361\025\255\203\053\232

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "TunTrust Root CA"
```

2E:44:10:2A:B5:8C:B8:54:19:45:1C:8E:19:D9:AC:F3:66:2C:AF:BC:61:4B:6A:53:96:0A:30:F7:D0:E2:EB:41

# Fingerprint (SHA1): CF:E9:70:84:0F:E0:73:0F:9D:F6:0C:7F:2C:4B:EE:20:46:34:9C:BB

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "TunTrust Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\317\351\160\204\017\340\163\017\235\366\014\177\054\113\356\040

<sup>#</sup> Issuer: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN

<sup>#</sup> Serial Number:13:02:d5:e2:40:4c:92:46:86:16:67:5d:b4:bb:bb:b2:6b:3e:fc:13

<sup>#</sup> Subject: CN=TunTrust Root CA,O=Agence Nationale de Certification Electronique,C=TN

<sup>#</sup> Not Valid Before: Fri Apr 26 08:57:56 2019

<sup>#</sup> Not Valid After: Tue Apr 26 08:57:56 2044

<sup>#</sup> Fingerprint (SHA-256):

```
\106\064\234\273
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\205\023\271\220\133\066\134\266\136\270\132\370\340\061\127\264
END
CKA ISSUER MULTILINE OCTAL
\060\141\061\013\060\011\006\003\125\004\006\023\002\124\116\061
\067\060\065\006\003\125\004\012\014\056\101\147\145\156\143\145
\040\116\141\164\151\157\156\141\154\145\040\144\145\040\103\145
\162\164\151\146\151\143\141\164\151\157\156\040\105\154\145\143
\164\162\157\156\151\161\165\145\061\031\060\027\006\003\125\004
\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\023\002\325\342\100\114\222\106\206\026\147\135\264\273
\273\262\153\076\374\023
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
{\tt CKA\_TRUST\_STEP\_UP\_APPROVED\ CK\_BBOOL\ CK\_FALSE}
# Certificate "HARICA TLS RSA Root CA 2021"
# Issuer: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:39:ca:93:1c:ef:43:f3:c6:8e:93:c7:f4:64:89:38:7e
# Subject: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 10:55:38 2021
# Not Valid After: Mon Feb 13 10:55:37 2045
# Fingerprint (SHA-256):
D9:5D:0E:8E:DA:79:52:5B:F9:BE:B1:1B:14:D2:10:0D:32:94:98:5F:0C:62:D9:FA:BD:9C:D9:99:EC:CB:7B:1D
# Fingerprint (SHA1): 02:2D:05:82:FA:88:CE:14:0C:06:79:DE:7F:14:10:E9:45:D7:A5:6D
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA TLS RSA Root CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061 $$
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
```

\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004 \003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123

\101\040\122\157\157\164\040\103\101\040\062\060\062\061

**END** 

CKA ID UTF8 "0"

### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000154\001\006\003\125\004\006\023\002\107\122\061 $$ \0067\060\065\006\003\125\004\012\014\056\110\145\154\154\154\145\156 $$ \151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040 $$ \122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\155\163\164\151\156\163\164\151\164\165 $$ \164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004 $$ \003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123 $$ \101\040\122\157\157\164\040\103\101\040\062\066\062\061 $$$ 

**END** 

### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\071\312\223\034\357\103\363\306\216\223\307\364\144\211 \070\176

**END** 

### CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\202\005\244\060\202\003\214\240\003\002\001\002\002\002\0071$ \312\223\034\357\103\363\306\216\223\307\364\144\211\070\176\060 \015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\154 \065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143 \040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145 \157\156\163\040\103\101\061\044\060\042\006\003\125\004\003\014 \033\110\101\122\111\103\101\040\124\114\123\040\122\123\101\040 \122\157\157\164\040\103\101\040\062\060\062\061\060\036\027\015 \062\061\060\062\061\071\061\060\065\065\063\070\132\027\015\064 \065\060\062\061\063\061\060\065\065\063\067\132\060\154\061\013 \060\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006 \003\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101  $\\ 143 \\ 141 \\ 144 \\ 145 \\ 155 \\ 151 \\ 143 \\ 040 \\ 141 \\ 156 \\ 144 \\ 040 \\ 122 \\ 145 \\ 163 \\ 145 \\$ \141\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156 \163\040\103\101\061\044\060\042\006\003\125\004\003\014\033\110 \101\122\111\103\101\040\124\114\123\040\122\123\101\040\122\157 \157\164\040\103\101\040\062\060\062\061\060\202\002\002\042\060\015 \006\011\052\206\110\206\367\015\001\001\001\005\000\003\202\002 \017\000\060\202\002\012\002\202\002\001\000\213\302\347\257\145 \233\005\147\226\311\015\044\271\320\016\144\374\316\342\044\030  $\label{eq:condition} $$ \054\204\177\167\121\313\004\021\066\270\136\355\151\161\247\236$ \344\045\011\227\147\301\107\302\317\221\026\066\142\075\070\004 \341\121\202\377\254\322\264\151\335\056\354\021\243\105\356\153 \153\073\114\277\214\215\244\036\235\021\271\351\070\371\172\016 \014\230\342\043\035\321\116\143\324\347\270\101\104\373\153\257 \153\332\037\323\305\221\210\133\244\211\222\321\201\346\214\071 \130\240\326\151\103\251\255\230\122\130\156\333\012\373\153\317 \150\372\343\244\136\072\105\163\230\007\352\137\002\162\336\014 \245\263\237\256\251\035\267\035\263\374\212\131\347\156\162\145 \255\365\060\224\043\007\363\202\026\113\065\230\234\123\273\057

\312\344\132\331\307\215\035\374\230\231\373\054\244\202\153\360 \052\037\216\013\137\161\134\134\256\102\173\051\211\201\313\003 \243\231\312\210\236\013\100\011\101\063\333\346\130\172\375\256 \231\160\300\132\017\326\023\206\161\057\166\151\374\220\335\333 \055\156\321\362\233\365\032\153\236\157\025\214\172\360\113\050 \240\042\070\200\044\154\066\244\073\362\060\221\363\170\023\317 \301\077\065\253\361\035\021\043\265\103\042\236\001\222\267\030 \002\345\021\321\202\333\025\000\314\141\067\301\052\174\232\341 \320\272\263\120\106\356\202\254\235\061\370\373\043\342\003\000 \110\160\243\011\046\171\025\123\140\363\070\134\255\070\352\201 \000\143\024\271\063\136\335\013\333\240\105\007\032\063\011\370 \115\264\247\002\246\151\364\302\131\005\210\145\205\126\256\113 \313\340\336\074\175\055\032\310\351\373\037\243\141\112\326\052  $\label{eq:condition} $$ \023\25\167\114\032\030\233\221\017\130\330\006\124\305\227\370 $$$ \252\077\040\212\246\205\246\167\366\246\374\034\342\356\156\224 \063\052\203\120\204\012\345\117\206\370\120\105\170\000\201\353 \133\150\343\046\215\314\173\134\121\364\024\054\100\276\032\140 \035\172\162\141\035\037\143\055\210\252\316\242\105\220\010\374 \153\276\263\120\052\132\375\250\110\030\106\326\220\100\222\220  $\label{eq:condition} $$ \012\204\136\150\061\370\353\355\015\323\035\306\175\231\030\125$ \126\047\145\056\215\105\305\044\354\316\343\002\003\001\000\001 \243\102\060\100\060\017\006\003\125\035\023\001\001\377\004\005 \012\110\043\246\140\244\222\012\063\352\223\133\305\127\352\045 \115\275\022\356\060\016\006\003\125\035\017\001\001\377\004\004 \003\002\001\206\060\015\006\011\052\206\110\206\367\015\001\001 \013\005\000\003\202\002\001\000\076\220\110\252\156\142\025\045 \146\173\014\325\214\213\211\235\327\355\116\007\357\234\320\024 \137\136\120\275\150\226\220\244\024\021\252\150\155\011\065\071 \100\011\332\364\011\054\064\245\173\131\204\111\051\227\164\310  $\label{eq:condition} $$ \007\036\107\155\362\316\034\120\046\343\236\075\100\123\077\367 $$$ \177\226\166\020\305\106\245\320\040\113\120\364\065\073\030\364 \125\152\101\033\107\006\150\074\273\011\010\142\331\137\125\102 \252\254\123\205\254\225\126\066\126\253\344\005\214\305\250\332 \037\243\151\275\123\017\304\377\334\312\343\176\362\114\210\206 \107\106\032\363\000\365\200\221\242\334\103\102\224\233\040\360 \321\315\262\353\054\123\302\123\170\112\117\004\224\101\232\217  $\\ \langle 047 \rangle 062 \rangle 301 \rangle 345 \rangle 111 \rangle 031 \rangle 277 \rangle 361 \rangle 362 \rangle 302 \rangle 213 \rangle 250 \rangle 012 \rangle 071 \rangle 061 \rangle 050$  $\label{eq:condition} $$ \264\175\142\066\054\115\354\037\063\266\176\167\155\176\120\360$$ \237\016\327\021\217\317\030\305\343\047\376\046\357\005\235\317 \317\067\305\320\173\332\073\260\026\204\014\072\223\326\276\027 \333\017\076\016\031\170\011\307\251\002\162\042\113\367\067\166 \272\165\304\205\003\132\143\325\261\165\005\302\271\275\224\255 \214\025\231\247\223\175\366\305\363\252\164\317\004\205\224\230 \000\364\342\371\312\044\145\277\340\142\257\310\305\372\262\311 \236\126\110\332\171\375\226\166\025\276\243\216\126\304\263\064 \374\276\107\364\301\264\250\374\325\060\210\150\356\313\256\311 \143\304\166\276\254\070\030\341\136\134\317\256\072\042\121\353

 $\label{eq:control_stress} $$ 321\213\263\363\053\063\007\124\207\372\264\262\023\173\272\123\004\142\001\235\361\300\117\356\341\0072\324\213\040\020\372\002\127\346\357\301\013\267\220\106\234\031\051\214\334\157\240\112\151\151\224\267\044\145\240\377\254\077\316\001\373\041\056\375\150\370\233\362\245\317\061\070\134\025\252\346\227\000\301\337\132\245\247\071\252\351\204\177\074\121\250\072\331\224\133\214\277\117\010\161\345\333\250\134\324\322\246\376\000\243\306\026\307\017\350\200\316\034\050\144\164\031\010\323\102\343\316\000\135\177\261\334\023\260\341\005\313\321\040\252\206\164\236\071\347\221\375\377\133\326\367\255\246\057\003\013\155\343\127\124\353\166\123\030\215\021\230\272$ 

END

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "HARICA TLS RSA Root CA 2021"
- # Issuer: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
- # Serial Number:39:ca:93:1c:ef:43:f3:c6:8e:93:c7:f4:64:89:38:7e
- # Subject: CN=HARICA TLS RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
- # Not Valid Before: Fri Feb 19 10:55:38 2021
- # Not Valid After: Mon Feb 13 10:55:37 2045
- # Fingerprint (SHA-256):
- D9:5D:0E:8E:DA:79:52:5B:F9:BE:B1:1B:14:D2:10:0D:32:94:98:5F:0C:62:D9:FA:BD:9C:D9:99:EC:CB:7B:1D
- # Fingerprint (SHA1): 02:2D:05:82:FA:88:CE:14:0C:06:79:DE:7F:14:10:E9:45:D7:A5:6D
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA MODIFIABLE CK BBOOL CK FALSE
- CKA\_LABEL UTF8 "HARICA TLS RSA Root CA 2021"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL
- \002\055\005\202\372\210\316\024\014\006\171\336\177\024\020\351 \105\327\245\155

END

CKA CERT MD5 HASH MULTILINE OCTAL

\145\107\233\130\206\335\054\360\374\242\204\037\036\226\304\221

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000154\001\006\003\125\004\006\023\002\107\122\061 $$ \0067\060\065\006\003\125\004\012\014\056\110\145\154\154\154\145\156 $$ \151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040 $$ \122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165 $$ \164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004 $$ \003\014\033\110\101\122\111\103\101\040\124\114\123\040\122\123 $$ \101\040\122\157\157\164\040\103\101\040\062\060\062\061 $$$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\071\312\223\034\357\103\363\306\216\223\307\364\144\211

```
\070\176
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "HARICA TLS ECC Root CA 2021"
# Issuer: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:67:74:9d:8d:77:d8:3b:6a:db:22:f4:ff:59:e2:bf:ce
# Subject: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 11:01:10 2021
# Not Valid After: Mon Feb 13 11:01:09 2045
# Fingerprint (SHA-256):
3F:99:CC:47:4A:CF:CE:4D:FE:D5:87:94:66:5E:47:8D:15:47:73:9F:2E:78:0F:1B:B4:CA:9B:13:30:97:D4:01
# Fingerprint (SHA1): BC:B0:C1:9D:E9:98:92:70:19:38:57:E9:8D:A7:B4:5D:6E:EE:01:48
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
```

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HARICA TLS ECC Root CA 2021"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061 $$ \067\060\065\006\003\125\004\012\014\056\110\145\154\154\154\145\156 $$ \151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040 $$ \122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\151\164\165 $$ \164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004 $$ \003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103 $$ \103\040\122\157\157\164\040\103\101\040\062\060\062\061 $$$ 

**END** 

CKA\_ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000154\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003\125\004\012\014\056\110\145\154\154\154\156\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\151\164\165\164\151\157\156\163\040\103\101\061\044\060\042\006\003\125\004\003\014\033\110\101\122\111\103\101\040\124\114\123\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062\061\ END$ 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\147\164\235\215\167\330\073\152\333\042\364\377\131\342 \277\316

END

CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\124\060\202\001\333\240\003\002\001\002\002\020\147 \164\235\215\167\330\073\152\333\042\364\377\131\342\277\316\060 \012\006\010\052\206\110\316\075\004\003\003\060\154\061\013\060 \011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003 \125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143  $\\ 141\\144\\145\\155\\151\\143\\040\\141\\156\\144\\040\\122\\145\\163\\145\\141$ \162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163 \040\103\101\061\044\060\042\006\003\125\004\003\014\033\110\101 \164\040\103\101\040\062\060\062\061\060\036\027\015\062\061\060 \003\125\004\006\023\002\107\122\061\067\060\065\006\003\125\004 \150\040\111\156\163\164\151\164\165\164\151\157\156\163\040\103 \103\101\040\124\114\123\040\105\103\103\040\122\157\157\164\040 \103\101\040\062\060\062\061\060\166\060\020\006\007\052\206\110 \316\075\002\001\006\005\053\201\004\000\042\003\142\000\004\070 \010\376\261\240\226\322\172\254\257\111\072\320\300\340\303\073 \050\252\361\162\155\145\000\107\210\204\374\232\046\153\252\113 \272\154\004\012\210\136\027\362\125\207\374\060\260\064\342\064 \130\127\032\204\123\351\060\331\251\362\226\164\303\121\037\130  $\label{eq:condition} $$ \frac{111 \cdot 061 \cdot 314 \cdot 230 \cdot 116 \cdot 140 \cdot 021 \cdot 207 \cdot 165 \cdot 323 \cdot 162 \cdot 224 \cdot 220 \cdot 117 \cdot 233 \cdot 020 }{111 \cdot 061 \cdot 314 \cdot 230 \cdot 116 \cdot 140 \cdot 021 \cdot 207 \cdot 165 \cdot 323 \cdot 162 \cdot 224 \cdot 220 \cdot 117 \cdot 233 \cdot 020 }$ \045\052\250\170\055\276\220\101\130\220\025\162\247\241\267\243 \102\060\100\060\017\006\003\125\035\023\001\001\377\004\005\060  $\label{eq:condition} $$ \003\001\001\377\060\035\006\003\125\035\016\004\026\004\024\311 $$$ \033\123\201\022\376\004\325\026\321\252\274\232\157\267\240\225 \031\156\312\060\016\006\003\125\035\017\001\001\377\004\004\003  $\label{eq:condition} $$ \002\001\206\060\012\006\010\052\206\110\316\075\004\003\003\003$ \147\000\060\144\002\060\021\336\256\370\334\116\210\260\251\360 \042\255\302\121\100\357\140\161\055\356\217\002\304\135\003\160 \111\244\222\352\305\024\210\160\246\323\015\260\252\312\054\100 \234\373\351\202\156\232\002\060\053\107\232\007\306\321\302\201 \174\312\013\226\030\101\033\243\364\060\011\236\265\043\050\015 \237\024\266\074\123\242\114\006\151\175\372\154\221\306\052\111 \105\346\354\267\023\341\072\154

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "HARICA TLS ECC Root CA 2021"

<sup>#</sup> Issuer: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

<sup>#</sup> Serial Number:67:74:9d:8d:77:d8:3b:6a:db:22:f4:ff:59:e2:bf:ce

<sup>#</sup> Subject: CN=HARICA TLS ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR

<sup>#</sup> Not Valid Before: Fri Feb 19 11:01:10 2021

```
# Fingerprint (SHA-256):
3F:99:CC:47:4A:CF:CE:4D:FE:D5:87:94:66:5E:47:8D:15:47:73:9F:2E:78:0F:1B:B4:CA:9B:13:30:97:D4:01
# Fingerprint (SHA1): BC:B0:C1:9D:E9:98:92:70:19:38:57:E9:8D:A7:B4:5D:6E:EE:01:48
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "HARICA TLS ECC Root CA 2021"
CKA CERT SHA1 HASH MULTILINE OCTAL
\274\260\301\235\351\230\222\160\031\070\127\351\215\247\264\135
\156\356\001\110
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\256\367\114\345\146\065\321\267\233\214\042\223\164\323\113\260
END
CKA_ISSUER MULTILINE_OCTAL
\060\154\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\label{eq:condition} $$ \frac{151}143\\040\\101\\1143\\141\\144\\145\\155\\151\\143\\040\\141\\156\\144\\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\103\040\122\157\157\164\040\103\101\040\062\060\062\061
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\147\164\235\215\167\330\073\152\333\042\364\377\131\342
\277\316
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "HARICA Client RSA Root CA 2021"
# Issuer: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:55:52:f8:1e:db:1b:24:2c:9e:bb:96:18:cd:02:28:3e
# Subject: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 10:58:46 2021
# Not Valid After: Mon Feb 13 10:58:45 2045
# Fingerprint (SHA-256):
1B:E7:AB:E3:06:86:B1:63:48:AF:D1:C6:1B:68:66:A0:EA:7F:48:21:E6:7D:5E:8A:F9:37:CF:80:11:BC:75:0D
# Fingerprint (SHA1): 46:C6:90:0A:77:3A:B6:BC:F4:65:AD:AC:FC:E3:F7:07:00:6E:DE:6E
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
```

# Not Valid After: Mon Feb 13 11:01:09 2045

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "HARICA Client RSA Root CA 2021"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA\_SUBJECT\_MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000157\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006\003\125\004\012\014\056\110\145\154\154\154\145\156\161\144\040\122\145\163\145\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163\040\103\101\040\103\154\151\145\156\164\1040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062\061$ 

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000157\061\013\060\011\006\003\125\004\006\023\002\107\122\061 \\ \0067\060\065\006\003\125\004\012\014\056\110\145\154\154\154\155\156\151\143\040\141\156\144\040 \\ \151\143\040\101\143\141\144\145\155\151\143\040\141\156\164\151\164\151\164\165\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062\0661$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \02\020\125\122\370\036\333\033\044\054\236\273\226\030\315\002\050\076$ 

**END** 

## CKA VALUE MULTILINE OCTAL

\060\202\005\252\060\202\003\222\240\003\002\001\002\002\002\125 \122\370\036\333\033\044\054\236\273\226\030\315\002\050\076\060 \015\006\011\052\206\110\206\367\015\001\001\013\005\000\060\157 \061\013\060\011\006\003\125\004\006\023\002\107\122\061\067\060 \065\006\003\125\004\012\014\056\110\145\154\154\145\156\151\143 \040\101\143\141\144\145\155\151\143\040\141\156\144\040\122\145 \163\145\141\162\143\150\040\111\156\163\164\151\164\165\164\151 \157\156\163\040\103\101\061\047\060\045\006\003\125\004\003\014  $\label{eq:condition} $$ \036\110\101\122\111\103\101\040\103\154\151\145\156\164\040\122$$ \123\101\040\122\157\157\164\040\103\101\040\062\060\062\061\060  $\label{eq:condition} $$ \036\027\015\062\061\060\062\061\071\061\060\065\070\064\066\132 $$$ \027\015\064\065\060\062\061\063\061\060\065\070\064\065\132\060 \157\061\013\060\011\006\003\125\004\006\023\002\107\122\061\067 \060\065\006\003\125\004\012\014\056\110\145\154\154\145\156\151 \143\040\101\143\141\144\145\155\151\143\040\141\156\144\040\122 \145\163\145\141\162\143\150\040\111\156\163\164\151\164\165\164 \151\157\156\163\040\103\101\061\047\060\045\006\003\125\004\003 \014\036\110\101\122\111\103\101\040\103\154\151\145\156\164\040 \122\123\101\040\122\157\157\164\040\103\101\040\062\060\062\061

\060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001 \001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001 \000\201\333\127\102\220\054\164\065\364\370\270\164\031\115\253 \011\132\167\105\201\163\142\260\065\237\370\320\267\063\000\207 \023\266\226\253\016\124\022\060\007\274\233\267\110\327\321\031 \203\256\216\330\251\361\251\000\204\260\214\136\236\350\014\217 \124\151\277\366\324\010\117\046\160\376\030\101\143\032\263\062 \213\100\370\007\253\127\061\360\306\026\166\147\232\264\335\057  $\label{eq:condition} $$ \320\222\204\221\161\156\017\056\143\351\037\123 $$$ \244\335\122\023\314\011\203\051\201\014\305\123\165\104\261\016 \147\123\030\320\303\037\210\113\237\224\044\264\051\274\273\350 \116\375\157\322\025\035\111\334\215\160\362\021\032\040\121\125 \021\272\210\157\304\367\120\171\326\252\061\342\204\075\136\062 \310\167\052\120\161\345\013\057\351\266\352\357\253\012\063\071  $\label{eq:condition} $$ \016\375\217\245\147\103\202\216\230\151\011\011\033\100\315\070 $$$ \147\107\352\311\354\227\161\022\336\044\365\162\074\321\367\103  $\label{eq:condition} $$ \frac{114 \cdot 046 \cdot 367 \cdot 220 \cdot 262 \cdot 211 \cdot 351 \cdot 105 \cdot 113 \cdot 125 \cdot 075 \cdot 061 \cdot 005 \cdot 172 \cdot 101 \cdot 342}{114 \cdot 046 \cdot 367 \cdot 220 \cdot 262 \cdot 211 \cdot 351 \cdot 105 \cdot 113 \cdot 125 \cdot 075 \cdot 061 \cdot 005 \cdot 172 \cdot 101 \cdot 342}$ \225\272\103\300\027\305\266\205\075\031\215\144\160\363\133\254 \315\237\323\051\165\207\113\225\147\152\246\370\321\335\274\220 \206\211\103\051\251\067\133\365\135\260\046\132\123\102\166\220 \053\317\236\126\154\053\124\317\134\232\145\337\133\213\110\140 \070\174\373\305\013\317\166\004\143\002\063\052\175\365\203\147  $\label{eq:condition} $$ 347\372\306\103\375\053\017\324\046\057\167\244\062\301\044\352$ \144\235\277\263\070\161\061\104\362\107\270\242\146\101\241\373  $\verb|233|173|274|307|106|152|165|277|132|242|214|350|152|104|301|270|$ \226\265\300\062\010\055\173\164\065\163\262\312\306\376\257\021 \162\030\366\347\310\302\317\245\052\352\173\326\131\350\174\240 \262\152\100\011\151\016\245\226\333\321\000\271\361\210\156\066 \360\210\262\235\361\122\362\303\174\277\060\211\074\012\151\371 \042\244\145\341\233\340\164\306\261\205\227\226\054\256\224\217  $\label{eq:condition} $$ 120\246\071\022\037\276\107\362\201\170\323\165\066\236\175\132$ \040\227\342\122\256\231\237\306\174\233\146\363\376\330\317\356 \275\227\006\035\055\205\334\076\066\123\226\173\040\272\350\310 \341\255\226\142\076\021\174\263\000\204\236\247\114\161\253\112 \067\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035 \023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125 \035\016\004\026\004\024\240\326\007\075\136\044\367\173\240\104  $\label{eq:condition} $$ \056\044\122\015\031\252\053\004\221\247\060\016\006\003\125\035$  $\label{eq:condition} $$ \017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206 $$$ \110\206\367\015\001\001\013\005\000\003\202\002\001\000\015\107 \371\011\146\061\122\354\171\356\302\250\362\150\076\355\226\105 \313\072\246\230\143\077\352\053\115\116\003\320\034\202\341\313 \323\345\326\253\133\147\050\274\235\376\014\231\012\200\125\247 \316\033\043\141\015\260\127\360\376\340\312\276\346\220\333\203  $\label{eq:condition} $$ \054\276\203\216\364\171\266\376\320\015\102\247\130\037\151\352 $$$ \201\365\005\245\376\106\150\353\154\170\311\340\352\347\346\336 \061\305\322\325\054\202\143\050\235\135\250\032\176\210\346\347 \053\361\054\325\320\005\236\334\055\275\067\146\324\004\242\247

\255\277\072\302\250\073\255\377\215\235\063\340\271\232\204\241 \207\037\166\364\202\164\327\016\371\060\110\076\133\210\076\252  $\label{eq:condition} $$ \frac{134}153\\326\\057\\014\\350\\216\\163\\302\\030\\221\\203\\071\\266\\146\\132$ \320\037\140\047\135\115\343\366\072\015\146\120\234\170\173\253 \363\023\020\256\017\057\253\350\144\263\030\040\235\106\065\144  $\label{eq:condition} $$ \045\163\352\233\020\134\130\065\211\261\106\110\247\364\254\324$ \035\236\133\314\251\245\032\023\117\044\120\252\331\033\155\261 \100\373\235\335\130\164\304\302\157\024\162\354\333\065\237\270 \124\165\105\303\246\310\032\050\065\072\256\145\362\251\230\316 \257\133\311\070\214\061\073\177\314\334\226\375\342\133\326\320  $\label{eq:condition} $$ \frac{131}364\\166\\272\\013\\313\\117\\203\\020\\307\\100\\320\\035\\140\\351\\052$ \345\110\130\167\014\105\151\276\031\161\004\044\342\343\044\037 \112\310\301\076\231\365\226\230\070\110\045\241\025\260\033\327 \342\204\030\133\366\161\065\232\150\173\100\314\030\134\014\044 \235\324\225\365\231\252\106\352\256\254\277\364\024\031\044\350 \214\354\343\365\274\006\150\212\052\014\005\137\012\227\165\247 \334\176\300\375\327\172\030\337\060\321\070\113\037\260\230\160 \277\314\174\163\360\156\304\061\245\244\227\035\254\277\316\154 \041\112\276\047\043\147\363\006\126\201\012\221\216\266\341\003 \005\063\054\332\064\010\115\116\120\043\255\037\245\305\324\172 \376\352\011\354\247\050\140\213\106\174\265\352\233\335\117\371  $\label{eq:condition} $$ 347\153\025\306\210\317\103\333\345\047\334\004\126\156\157\106$  $\label{eq:condition} $$ \025\361\126\055\350\134\014\163\303\043\201\070\040\313\311\014$ \151\317\054\253\073\204\140\063\031\122\375\151\024\063 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "HARICA Client RSA Root CA 2021"
- # Issuer: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
- # Serial Number:55:52:f8:1e:db:1b:24:2c:9e:bb:96:18:cd:02:28:3e
- # Subject: CN=HARICA Client RSA Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
- # Not Valid Before: Fri Feb 19 10:58:46 2021
- # Not Valid After: Mon Feb 13 10:58:45 2045
- # Fingerprint (SHA-256):
- 1B:E7:AB:E3:06:86:B1:63:48:AF:D1:C6:1B:68:66:A0:EA:7F:48:21:E6:7D:5E:8A:F9:37:CF:80:11:BC:75:0D
- # Fingerprint (SHA1): 46:C6:90:0A:77:3A:B6:BC:F4:65:AD:AC:FC:E3:F7:07:00:6E:DE:6E
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "HARICA Client RSA Root CA 2021"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL
- $\label{eq:condition} $$106\306\220\012\167\072\266\274\364\145\255\254\374\343\367\007$$
- \000\156\336\156
- **END**
- CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

```
\157\355\134\327\210\314\070\251\334\351\335\331\135\333\330\355
END
CKA ISSUER MULTILINE OCTAL
\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\122\123\101\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
CKA SERIAL NUMBER MULTILINE OCTAL
\label{eq:condition} $$ \002\020\125\122\370\036\333\033\044\054\236\273\226\030\315\002
\050\076
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "HARICA Client ECC Root CA 2021"
# Issuer: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Serial Number:31:68:d9:d8:e1:62:57:1e:d2:19:44:88:e6:10:7d:f0
# Subject: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
# Not Valid Before: Fri Feb 19 11:03:34 2021
# Not Valid After: Mon Feb 13 11:03:33 2045
# Fingerprint (SHA-256):
8D:D4:B5:37:3C:B0:DE:36:76:9C:12:33:92:80:D8:27:46:B3:AA:6C:D4:26:E7:97:A3:1B:AB:E4:27:9C:F0:0B
# Fingerprint (SHA1): BE:64:D3:DA:14:4B:D2:6B:CD:AF:8F:DB:A6:A6:72:F8:DE:26:F9:00
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA LABEL UTF8 "HARICA Client ECC Root CA 2021"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061 $$
\067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156
\151\143\040\101\143\141\144\145\155\151\143\040\141\156\144\040
\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\165
\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004
\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164
\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062
\061
END
```

#### CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000157\061\013\060\011\006\003\125\004\006\023\002\107\122\061 $$ \067\060\065\006\003\125\004\012\014\056\110\145\154\154\154\155\156\151\143\040\101\145\156\144\040\122\145\163\145\141\162\143\150\040\111\156\163\164\151\164\151\164\165\164\151\157\156\163\040\103\101\061\047\060\045\006\003\125\004\003\014\036\110\101\122\111\103\101\040\103\154\151\145\156\164\040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062\060\062\061$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \020\061\150\331\330\341\142\127\036\322\031\104\210\346\020\175\360$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\202\002\132\060\202\001\341\240\003\002\001\002\002\002\0061$ \150\331\330\341\142\127\036\322\031\104\210\346\020\175\360\060 \012\006\010\052\206\110\316\075\004\003\003\060\157\061\013\060  $\label{eq:condition} $$ \004\003\125\004\006\023\002\107\122\061\067\060\065\006\003$ \125\004\012\014\056\110\145\154\154\145\156\151\143\040\101\143 \141\144\145\155\151\143\040\141\156\144\040\122\145\163\145\141 \162\143\150\040\111\156\163\164\151\164\165\164\151\157\156\163 \040\103\101\061\047\060\045\006\003\125\004\003\014\036\110\101 \122\111\103\101\040\103\154\151\145\156\164\040\105\103\103\040 \122\157\157\164\040\103\101\040\062\060\062\061\060\036\027\015 \062\061\060\062\061\071\061\061\060\063\063\064\132\027\015\064 \065\060\062\061\063\061\061\060\063\063\063\132\060\157\061\013 \060\011\006\003\125\004\006\023\002\107\122\061\067\060\065\006 \003\125\004\012\014\056\110\145\154\154\145\156\151\143\040\101 \143\141\144\145\155\151\143\040\141\156\144\040\122\145\163\145 \141\162\143\150\040\111\156\163\164\151\164\165\164\151\157\156 \163\040\103\101\061\047\060\045\006\003\125\004\003\014\036\110 \101\122\111\103\101\040\103\154\151\145\156\164\040\105\103\103 \040\122\157\157\164\040\103\101\040\062\060\062\061\060\166\060 \020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000 \042\003\142\000\004\007\030\255\225\226\224\320\134\017\202\367 \052\100\372\002\311\311\075\066\246\243\004\152\301\155\225\001 \210\140\022\124\154\134\242\053\156\023\072\210\225\014\034\046 \206\066\112\211\031\267\030\336\073\350\250\120\037\312\337\133 \277\111\200\025\333\343\060\341\035\132\307\052\212\001\007\376 \155\054\064\357\050\050\227\274\301\371\127\206\225\213\065\317 \236\132\321\150\225\243\102\060\100\060\017\006\003\125\035\023 \001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035 \354\116\137\032\273\123\315\220\255\060\016\006\003\125\035\017 \001\001\377\004\004\003\002\001\206\060\012\006\010\052\206\110 \316\075\004\003\003\003\147\000\060\144\002\060\114\061\105\106

 $\label{eq:constraint} $$ \frac{117\250\346\276\303\167\262\032\030\113\055\210\173\130\346\253}{224\153\104\003\260\027\377\337\202\163\104\121\054\375\223\035} $$ $$ \frac{103\123\154\054\322\211\354\100\014\357\041\001\056\002\060\057\311}{056\132\154\056\35\331\225\340\236\260\271\134\122\174\366\370} $$ $$ \frac{112\056\361\324\035\362\242\111\242\225\370\301\130\136\117} $$ $$ \frac{163\012\357\061\260\253\043\130\023\214\213\336\073} $$$ 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "HARICA Client ECC Root CA 2021"
- # Issuer: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
- # Serial Number:31:68:d9:d8:e1:62:57:1e:d2:19:44:88:e6:10:7d:f0
- # Subject: CN=HARICA Client ECC Root CA 2021,O=Hellenic Academic and Research Institutions CA,C=GR
- # Not Valid Before: Fri Feb 19 11:03:34 2021
- # Not Valid After: Mon Feb 13 11:03:33 2045
- # Fingerprint (SHA-256):
- 8D:D4:B5:37:3C:B0:DE:36:76:9C:12:33:92:80:D8:27:46:B3:AA:6C:D4:26:E7:97:A3:1B:AB:E4:27:9C:F0:0B
- # Fingerprint (SHA1): BE:64:D3:DA:14:4B:D2:6B:CD:AF:8F:DB:A6:A6:72:F8:DE:26:F9:00
- CKA CLASS CK OBJECT CLASS CKO NSS TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "HARICA Client ECC Root CA 2021"
- CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL
- \276\144\323\332\024\113\322\153\315\257\217\333\246\246\162\370
- \336\046\371\000

**END** 

**END** 

# CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \255\270\120\246\251\202\172\154\075\032\252\244\322\143\244\104$ 

**END** 

# CKA\_ISSUER MULTILINE\_OCTAL

\060\157\061\013\060\011\006\003\125\004\006\023\002\107\122\061 \067\060\065\006\003\125\004\012\014\056\110\145\154\154\145\156

 $\label{eq:condition} $$ \040\105\103\103\040\122\157\157\164\040\103\101\040\062\060\062$$ 

\061

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\061\150\331\330\341\142\127\036\322\031\104\210\346\020 \175\360

END

 ${\tt CKA\_TRUST\_SERVER\_AUTH\ CK\_TRUST\ CKT\_NSS\_MUST\_VERIFY\_TRUST}$ 

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

# CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Autoridad de Certificacion Firmaprofesional CIF A62634068"

#

- # Issuer: CN=Autoridad de Certificación Firmaprofesional CIF A62634068,C=ES
- # Serial Number:1b:70:e9:d2:ff:ae:6c:71
- # Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
- # Not Valid Before: Tue Sep 23 15:22:07 2014
- # Not Valid After: Mon May 05 15:22:07 2036
- # Fingerprint (SHA-256):
- 57:DE:05:83:EF:D2:B2:6E:03:61:DA:99:DA:9D:F4:64:8D:EF:7E:E8:44:1C:3B:72:8A:FA:9B:CD:E0:F9:B2:6A
- # Fingerprint (SHA1): 0B:BE:C2:27:22:49:CB:39:AA:DB:35:5C:53:E3:8C:AE:78:FF:B6:FE
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068"
- CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509
- CKA SUBJECT MULTILINE OCTAL
- $\label{eq:condition} $$ \060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061 $$$
- $\label{eq:condition} $$ 102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151 $$$
- \144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
- $\label{thm:limit} $$1157\156\141\154\040\103\111\106\040\101\066\062\066\063\064$$

\060\066\070

**END** 

CKA ID UTF8 "0"

# CKA ISSUER MULTILINE OCTAL

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\010\033\160\351\322\377\256\154\161$$ 

**END** 

#### CKA\_VALUE MULTILINE\_OCTAL

\101\066\062\066\063\064\060\066\070\060\036\027\015\061\064\060 \071\062\063\061\065\062\062\060\067\132\027\015\063\066\060\065  $\label{eq:condition} $$ \060\065\061\065\062\062\060\067\132\060\121\061\013\060\011\006$ \003\014\071\101\165\164\157\162\151\144\141\144\040\144\145\040 \103\145\162\164\151\146\151\143\141\143\151\157\156\040\106\151 \162\155\141\160\162\157\146\145\163\151\157\156\141\154\040\103 \111\106\040\101\066\062\066\063\064\060\066\070\060\202\002\042  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\001\005\000\003$ \202\002\017\000\060\202\002\012\002\202\002\001\000\312\226\153  $\label{eq:condition} $$ \216\352\370\373\361\242\065\340\177\114\332\340\303\122\327\175 $$$ \266\020\310\002\136\263\103\052\304\117\152\262\312\034\135\050 \232\170\021\032\151\131\127\257\265\040\102\344\213\017\346\337 \133\246\003\222\057\365\021\344\142\327\062\161\070\331\004\014  $\label{eq:condition} $$ 161\253\075\121\176\017\007\337\143\005\134\351\277\224\157\301 $$$ \051\202\300\264\332\121\260\301\074\273\255\067\112\134\312\361 \113\066\016\044\253\277\303\204\167\375\250\120\364\261\347\306 \057\322\055\131\215\172\012\116\226\151\122\002\252\066\230\354 \374\372\024\203\014\067\037\311\222\067\177\327\201\055\345\304 \271\340\076\064\376\147\364\076\146\321\323\364\100\317\136\142 \064\017\160\006\076\040\030\132\316\367\162\033\045\154\223\164 \024\223\243\163\261\016\252\207\020\043\131\137\040\005\031\107  $\label{eq:condition} $$ \frac{35}150 (216) 222 (022) 312 (135) 374 (326) 053 (262) 222 (074) 040 (317) 341 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 (162) 162 ($ \137\257\040\276\240\166\177\166\345\354\032\206\141\063\076\347 \173\264\077\240\017\216\242\271\152\157\271\207\046\157\101\154 \210\246\120\375\152\143\013\365\223\026\033\031\217\262\355\233 \233\311\220\365\001\014\337\031\075\017\076\070\043\311\057\217  $\label{eq:condition} $$ \014\321\002\376\033\125\326\116\320\215\074\257\117\244\363\376$ \257\052\323\005\235\171\010\241\313\127\061\264\234\310\220\262 \147\364\030\026\223\072\374\107\330\321\170\226\061\037\272\053  $\label{eq:condition} $$ \014\137\135\231\255\143\211\132\044\040\166\330\337\375\253\116$$ \246\042\252\235\136\346\047\212\175\150\051\243\347\212\270\332 \021\273\027\055\231\235\023\044\106\367\305\342\330\237\216\177 \307\217\164\155\132\262\350\162\365\254\356\044\020\255\057\024 \332\377\055\232\106\161\107\276\102\337\273\001\333\364\177\323 \050\217\061\131\133\323\311\002\246\264\122\312\156\227\373\103 \305\010\046\157\212\364\273\375\237\050\252\015\325\105\363\023  $\label{eq:condition} $$ \072\035\330\300\170\217\101\147\074\036\224\144\256\173\013\305$  $\label{eq:condition} $$ \350\31\001\210\071\032\227\206\144\101\325\073\207\014\156\372 $$$  $\label{eq:control_control_control_control} $$ \017\306\275\110\024\277\071\115\324\236\101\266\217\226\035\143 $$$ \226\223\331\225\006\170\061\150\236\067\006\073\200\211\105\141 \071\043\307\033\104\243\025\345\034\370\222\060\273\002\003\001 \000\001\243\201\357\060\201\354\060\035\006\003\125\035\016\004 \026\004\024\145\315\353\253\065\036\000\076\176\325\164\300\034 \264\163\107\016\032\144\057\060\022\006\003\125\035\023\001\001 \377\004\010\060\006\001\001\377\002\001\001\060\201\246\006\003 \125\035\040\004\201\236\060\201\233\060\201\230\006\004\125\035  $\\ \langle 040 \rangle 000 \rangle 060 \rangle 201 \rangle 217 \rangle 060 \rangle 057 \rangle 006 \rangle 010 \rangle 053 \rangle 006 \rangle 001 \rangle 005 \rangle 007 \rangle 002$ 

\001\026\043\150\164\164\160\072\057\057\167\167\167\056\146\151 \162\155\141\160\162\157\146\145\163\151\157\156\141\154\056\143 \157\155\057\143\160\163\060\134\006\010\053\006\001\005\005\007 \002\002\060\120\036\116\000\120\000\141\000\163\000\145\000\157 \000\040\000\144\000\145\000\040\000\154\000\141\000\040\000\102  $\label{eq:condition} $$ \000\157\000\156\000\141\000\156\000\157\000\166\000\141\000\040 $$$ \000\064\000\067\000\040\000\102\000\141\000\162\000\143\000\145 \000\154\000\157\000\156\000\141\000\040\000\060\000\070\000\060  $\label{eq:condition} $$ \000\061\000\067\060\016\000\003\125\035\017\001\001\377\004\004$ \003\002\001\006\060\015\006\011\052\206\110\206\367\015\001\001 \013\005\000\003\202\002\001\000\164\207\050\002\053\167\037\146 \211\144\355\217\164\056\106\034\273\250\370\370\013\035\203\266 \072\247\350\105\212\007\267\340\076\040\313\341\010\333\023\010 \370\050\241\065\262\200\263\013\121\300\323\126\232\215\063\105 \111\257\111\360\340\075\007\172\105\023\132\377\310\227\330\323 \030\054\175\226\370\335\242\145\103\160\223\220\025\272\220\337 \350\031\260\333\054\212\140\017\267\157\224\007\036\035\246\311 \205\366\275\064\370\100\170\142\020\160\072\276\175\113\071\201 \251\020\324\226\101\273\370\137\034\013\035\010\362\261\260\211 \172\362\367\240\340\304\217\213\170\265\073\130\245\043\216\117 \125\376\066\073\340\014\267\312\052\060\101\040\264\200\315\256 \374\166\146\163\250\256\156\341\174\332\003\350\224\040\346\042 \243\320\037\220\135\040\123\024\046\127\332\124\227\337\026\104 \020\001\036\210\146\217\162\070\223\335\040\267\064\276\327\361 \356\143\216\107\171\050\006\374\363\131\105\045\140\042\063\033 \243\137\250\272\052\332\032\075\315\100\352\214\356\005\025\225 \325\245\054\040\057\247\230\050\356\105\374\361\270\210\000\054 \217\102\332\121\325\234\345\023\150\161\105\103\213\236\013\041 \074\113\134\005\334\032\237\230\216\332\275\042\236\162\315\255 \012\313\314\243\147\233\050\164\304\233\327\032\074\004\130\246  $\label{eq:condition} $$ \202\235\255\307\173\157\377\200\226\351\370\215\152\275\030\220 $$$ \035\377\111\032\220\122\067\223\057\074\002\135\202\166\013\121 \347\026\307\127\370\070\371\247\315\233\042\124\357\143\260\025 \155\123\145\003\112\136\112\240\262\247\216\111\000\131\070\325 \307\364\200\144\365\156\225\120\270\021\176\025\160\070\112\260 \177\320\304\062\160\300\031\377\311\070\055\024\054\146\364\102 \104\346\125\166\033\200\025\127\377\300\247\247\252\071\252\330 \323\160\320\056\272\353\224\152\372\137\064\206\347\142\265\375 \212\360\060\205\224\311\257\044\002\057\157\326\335\147\376\343 \260\125\117\004\230\117\244\101\126\342\223\320\152\350\326\363 \373\145\340\316\165\304\061\131\014\356\202\310\014\140\063\112 \031\272\204\147\047\017\274\102\135\275\044\124\015\354\035\160 \006\137\244\274\372\040\174\125

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Issuer: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
# Serial Number:1b:70:e9:d2:ff:ae:6c:71
# Subject: CN=Autoridad de Certificacion Firmaprofesional CIF A62634068,C=ES
# Not Valid Before: Tue Sep 23 15:22:07 2014
# Not Valid After: Mon May 05 15:22:07 2036
# Fingerprint (SHA-256):
57:DE:05:83:EF:D2:B2:6E:03:61:DA:99:DA:9D:F4:64:8D:EF:7E:E8:44:1C:3B:72:8A:FA:9B:CD:E0:F9:B2:6A
# Fingerprint (SHA1): 0B:BE:C2:27:22:49:CB:39:AA:DB:35:5C:53:E3:8C:AE:78:FF:B6:FE
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Autoridad de Certificacion Firmaprofesional CIF A62634068"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\013\276\302\047\042\111\313\071\252\333\065\134\123\343\214\256
\170\377\266\376
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\116\156\233\124\114\312\267\372\110\344\220\261\025\113\034\243
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\121\061\013\060\011\006\003\125\004\006\023\002\105\123\061\
\102\060\100\006\003\125\004\003\014\071\101\165\164\157\162\151
\144\141\144\040\144\145\040\103\145\162\164\151\146\151\143\141
\143\151\157\156\040\106\151\162\155\141\160\162\157\146\145\163
\151\157\156\141\154\040\103\111\106\040\101\066\062\066\063\064
\060\066\070
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\010\033\160\351\322\377\256\154\161
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "vTrus ECC Root CA"
# Issuer: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN
# Serial Number:6e:6a:bc:59:aa:53:be:98:39:67:a2:d2:6b:a4:3b:e6:6d:1c:d6:da
# Subject: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN
# Not Valid Before: Tue Jul 31 07:26:44 2018
# Not Valid After: Fri Jul 31 07:26:44 2043
# Fingerprint (SHA-256):
30:FB:BA:2C:32:23:8E:2A:98:54:7A:F9:79:31:E5:50:42:8B:9B:3F:1C:8E:EB:66:33:DC:FA:86:C5:B2:7D:D3
# Fingerprint (SHA1): F6:9C:DB:B0:FC:F6:02:13:B6:52:32:A6:A3:91:3F:16:70:DA:C3:E1
```

# Trust for "Autoridad de Certificacion Firmaprofesional CIF A62634068"

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA LABEL UTF8 "vTrus ECC Root CA"

 ${\tt CKA\_CERTIFICATE\_TYPE\ CK\_CERTIFICATE\_TYPE\ CKC\_X\_509}$ 

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \000107\061\013\060\011\006\003\125\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103\103\040\122\157\157\164\040\103\101$ 

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000107\061\013\060\011\006\003\125\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103\103\040\122\157\157\164\040\103\101$ 

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\156\152\274\131\252\123\276\230\071\147\242\322\153\244 \073\346\155\034\326\332

**END** 

## CKA VALUE MULTILINE OCTAL

\060\202\002\017\060\202\001\225\240\003\002\001\002\002\002\156 \152\274\131\252\123\276\230\071\147\242\322\153\244\073\346\155 \034\326\332\060\012\006\010\052\206\110\316\075\004\003\003\060 \107\061\013\060\011\006\003\125\004\006\023\002\103\116\061\034  $\label{eq:condition} $$ \004\003\125\004\012\023\023\151\124\162\165\163\103\150 $$$ \151\156\141\040\103\157\056\054\114\164\144\056\061\032\060\030 \006\003\125\004\003\023\021\166\124\162\165\163\040\105\103\103 \040\122\157\157\164\040\103\101\060\036\027\015\061\070\060\067 \063\061\060\067\062\066\064\064\132\027\015\064\063\060\067\063 \061\060\067\062\066\064\064\132\060\107\061\013\060\011\006\003 \125\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012 \023\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056  $\label{eq:condition} $$ \054\114\164\144\056\061\032\060\030\006\003\125\004\003\023\021 $$$ \166\124\162\165\163\040\105\103\103\040\122\157\157\164\040\103 \101\060\166\060\020\006\007\052\206\110\316\075\002\001\006\005  $\label{eq:condition} $$ \053\201\004\000\042\003\142\000\004\145\120\112\256\214\171\226$ \112\252\034\010\303\243\242\315\376\131\126\101\167\375\046\224 \102\273\035\315\010\333\163\262\133\165\363\317\234\116\202\364 \277\370\141\046\205\154\326\205\133\162\160\322\375\333\142\264 \337\123\213\275\261\104\130\142\102\011\307\372\177\133\020\347 \376\100\375\300\330\303\053\062\347\160\246\267\246\040\125\035 \173\200\135\113\217\147\114\361\020\243\102\060\100\060\035\006

 $\label{eq:constraint} $$\03125\035\016\004\026\004\024\230\071\315\276\330\262\214\367\262\253\341\255\044\257\173\174\241\333\037\317\060\017\006\003\125\035\023\001\001\377\004\005\060\003\0001\001\377\060\016\006\0012\006\003\125\035\017\001\001\377\004\003\003\0002\001\006\060\012\006\012\006\012\006\110\316\075\004\003\003\003\150\000\060\145\002\060\127\235\335\126\361\307\343\351\270\111\120\153\233\151\303\157\354\303\175\045\344\127\225\023\100\233\122\323\073\363\100\031\274\046\307\055\006\236\265\173\066\237\365\045\324\143\153\000\002\061\000\351\323\306\236\126\232\052\314\241\332\077\310\146\053\323\130\234\040\205\372\253\221\212\160\160\021\070\140\144\013\142\011\221\130\000\371\115\373\064\150\332\011\255\041\006\030\224\316$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "vTrus ECC Root CA"
- # Issuer: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN
- # Serial Number:6e:6a:bc:59:aa:53:be:98:39:67:a2:d2:6b:a4:3b:e6:6d:1c:d6:da
- # Subject: CN=vTrus ECC Root CA,O="iTrusChina Co.,Ltd.",C=CN
- # Not Valid Before: Tue Jul 31 07:26:44 2018
- # Not Valid After: Fri Jul 31 07:26:44 2043
- # Fingerprint (SHA-256):
- 30:FB:BA:2C:32:23:8E:2A:98:54:7A:F9:79:31:E5:50:42:8B:9B:3F:1C:8E:EB:66:33:DC:FA:86:C5:B2:7D:D3
- # Fingerprint (SHA1): F6:9C:DB:B0:FC:F6:02:13:B6:52:32:A6:A3:91:3F:16:70:DA:C3:E1

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "vTrus ECC Root CA"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\366\234\333\260\374\366\002\023\266\122\062\246\243\221\077\026 \160\332\303\341

**END** 

CKA CERT MD5 HASH MULTILINE OCTAL

 $\label{eq:condition} $$ \36\113\301\365\122\214\233\103\341\076\217\125\124\027\215\205$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00107\061\013\060\011\006\003\125\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056\054\114\164\144\056\061\032\060\030\006\003\125\004\003\023\021\166\124\162\165\163\040\105\103\103\040\122\157\157\164\040\103\101$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \02^024\156\152\274\131\252\123\276\230\071\147\242\322\153\244\073\346\155\034\326\332$ 

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "vTrus Root CA"

#

- # Issuer: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN
- # Serial Number:43:e3:71:13:d8:b3:59:14:5d:b7:ce:8c:fd:35:fd:6f:bc:05:8d:45
- # Subject: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN
- # Not Valid Before: Tue Jul 31 07:24:05 2018
- # Not Valid After: Fri Jul 31 07:24:05 2043
- # Fingerprint (SHA-256):

8A:71:DE:65:59:33:6F:42:6C:26:E5:38:80:D0:0D:88:A1:8D:A4:C6:A9:1F:0D:CB:61:94:E2:06:C5:C9:63:87

# Fingerprint (SHA1): 84:1A:69:FB:F5:CD:1A:25:34:13:3D:E3:F8:FC:B8:99:D0:C9:14:B7

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "vTrus Root CA"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061 $$$ 

\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103

\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060

 $\\ \langle 024 \rangle 006 \rangle 003 \rangle 125 \rangle 004 \rangle 003 \rangle 023 \rangle 015 \rangle 166 \rangle 124 \rangle 162 \rangle 163 \rangle 040 \rangle 122 \rangle 157 \rangle 166 \rangle 167 \rangle$ 

\157\164\040\103\101

END

CKA\_ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00103\061\013\060\011\006\003\125\004\006\023\002\103\116\061\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157\157\164\040\103\101$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\103\343\161\023\330\263\131\024\135\267\316\214\375\065 \375\157\274\005\215\105

**END** 

#### CKA\_VALUE MULTILINE\_OCTAL

\163\103\150\151\156\141\040\103\157\056\054\114\164\144\056\061 \026\060\024\006\003\125\004\003\023\015\166\124\162\165\163\040 \122\157\157\164\040\103\101\060\036\027\015\061\070\060\067\063 \061\060\067\062\064\060\065\132\027\015\064\063\060\067\063\061 \060\067\062\064\060\065\132\060\103\061\013\060\011\006\003\125 \023\151\124\162\165\163\103\150\151\156\141\040\103\157\056\054 \114\164\144\056\061\026\060\024\006\003\125\004\003\023\015\166 \124\162\165\163\040\122\157\157\164\040\103\101\060\202\002\042 \060\015\006\011\052\206\110\206\367\015\001\001\001\005\000\003 \202\002\017\000\060\202\002\012\002\202\002\001\000\275\125\174 \141\323\270\035\004\142\005\240\256\154\267\160\264\101\352\113 \003\136\020\077\220\132\034\213\073\260\146\213\154\110\246\034  $\label{eq:condition} $$ \042\272\325\100\222\356\063\262\043\131\311\216\274\130\332\213$ \236\320\031\362\057\131\306\214\143\132\272\237\243\013\260\263 \232\134\272\021\270\022\351\014\273\317\156\154\200\207\051\024  $\label{eq:condition} $$ \03\054\215\044\232\310\144\203\265\152\254\023\054\063\361\237 $$$ \334\054\141\074\032\077\160\125\233\255\000\122\177\317\004\271 \376\066\372\234\300\026\256\142\376\226\114\103\176\125\024\276  $\label{eq:condition} $$ \032\263\322\155\302\257\166\146\225\153\052\260\224\167\205\136$ \004\017\142\035\143\165\367\153\347\313\133\232\160\354\076\147 \005\360\376\007\010\200\317\050\333\005\306\024\047\057\206\175  $\label{eq:condition} $$ 360\047\336\377\346\176\063\110\347\013\036\130\321\047\053\123$ \016\127\112\145\327\373\242\200\140\374\114\274\065\123\001\152 \227\162\202\257\361\035\160\350\234\365\357\136\302\154\307\107 \176\132\224\205\046\115\073\272\353\114\350\260\011\302\145\302 \235\235\011\233\116\265\227\005\254\365\006\240\367\066\005\176 \364\220\262\153\304\264\371\144\352\351\032\012\310\015\250\355 \047\311\324\347\263\271\253\202\042\220\047\075\052\350\174\220 \357\274\117\375\342\012\044\247\336\145\044\244\135\352\300\166  $\label{eq:condition} $$ \000\323\167\120\370\015\004\233\224\066\001\163\312\006\130\246 $$$ \323\073\334\372\004\106\023\125\212\311\104\107\270\121\071\032 \056\350\064\342\171\313\131\112\012\177\274\246\357\037\003\147 \152\131\053\045\142\223\331\123\031\146\074\047\142\051\206\115 \244\153\356\377\324\116\272\325\264\342\216\110\132\000\031\011 \361\005\331\316\221\261\367\353\351\071\117\366\157\004\103\232 \125\365\076\005\024\275\277\263\131\264\330\216\063\204\243\220  $\label{eq:local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_local_$  $\label{eq:condition} $$ 161\127\265\045\344\051\356\145\135\257\321\356\074\027\013\132 $$$ \103\305\245\206\352\044\236\342\005\007\334\064\102\022\221\326 \071\164\256\114\101\202\333\362\246\110\321\263\233\363\063\252 \363\246\300\305\116\365\364\235\166\143\346\002\306\042\113\301 \225\077\120\144\054\124\345\266\360\074\051\317\127\002\003\001 \000\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004 \024\124\142\160\143\361\165\204\103\130\216\321\026\040\261\306 \254\032\274\366\211\060\017\006\003\125\035\023\001\001\377\004 

\001\001\013\005\000\003\202\002\001\000\051\272\222\111\247\255 \360\361\160\303\344\227\360\237\251\045\325\153\236\064\376\346  $\label{eq:condition} $$ \032\144\366\072\153\122\262\020\170\032\237\114\332\212\332\354$$  $\label{eq:condition} $$ \034\067\122\340\102\113\373\154\166\312\044\013\071\022\025\235$$ \237\021\055\374\171\144\334\340\340\365\335\340\127\311\245\262  $\label{eq:condition} $$ 166\160\120\244\376\267\012\160\325\240\064\361\165\327\115\111 $$$ \272\021\321\263\330\354\202\377\353\016\304\277\144\055\175\143  $\label{eq:condition} $$ \frac{156}{027}170\\354\\135\\174\\210\\310\\353\\216\\127\\166\\331\\131\\004\\372$ \274\122\037\105\254\360\172\200\354\354\157\166\256\221\333\020 \216\004\334\222\337\240\366\346\256\111\323\301\154\022\033\314  $\label{eq:condition} $$ \051\252\371\010\245\342\067\024\312\261\270\146\357\032\202\344 $$$ \360\370\361\247\026\151\267\333\251\141\074\237\365\061\313\344 \000\106\302\057\164\261\261\327\201\356\250\046\225\274\210\257  $\label{eq:condition} $$ \frac{114 \cdot 065 \cdot 007 \cdot 052 \cdot 002 \cdot 312 \cdot 170 \cdot 024 \cdot 155 \cdot 107 \cdot 053 \cdot 100 \cdot 126 \cdot 351 \cdot 313 \cdot 052}{114 \cdot 065 \cdot 007 \cdot 052 \cdot 002 \cdot 312 \cdot 170 \cdot 024 \cdot 155 \cdot 107 \cdot 053 \cdot 100 \cdot 126 \cdot 351 \cdot 313 \cdot 052}$ \140\241\147\003\240\316\214\274\260\162\147\304\061\316\333\064 \345\045\003\140\045\173\161\230\344\300\033\053\137\164\102\322 \113\305\131\010\007\207\276\305\303\177\347\226\331\341\334\050 \227\326\217\005\343\365\233\116\312\035\120\107\005\123\260\312 \071\347\205\240\211\301\005\073\001\067\323\077\111\342\167\353 \043\310\210\146\073\075\071\166\041\106\361\354\137\043\270\353 \242\146\165\164\301\100\367\330\150\232\223\342\055\251\056\275 \034\243\036\310\164\306\244\055\172\040\253\073\270\260\106\375  $\label{eq:condition} $$ \frac{157}{335}\frac{137}{122}\frac{125}{165}\frac{142}{360}\frac{227}{240}\frac{174}{327}070\frac{375}{045}\frac{337}{337} $$$ \315\240\233\020\317\213\270\070\136\136\305\264\246\002\066\241  $\label{eq:condition} $$ \036\137\034\317\342\226\235\051\252\375\230\256\122\341\363\101 $$$ \122\373\251\056\162\226\237\047\343\252\163\175\370\032\043\146 \173\073\253\145\260\062\001\113\025\076\075\242\117\014\053\065 \242\306\331\147\022\065\060\315\166\056\026\263\231\236\115\117 \116\055\073\064\103\341\232\016\015\244\146\227\272\322\034\112 \114\054\052\213\213\201\117\161\032\251\335\134\173\173\010\305  $\label{eq:condition} $$ \000\015\067\100\343\174\173\124\137\057\205\137\166\366\367\247 $$$ \260\034\127\126\301\162\350\255\242\257\215\063\111\272\037\212 \334\346\164\174\140\206\157\207\227\173

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "vTrus Root CA"
```

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

<sup>#</sup> Issuer: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN

<sup>#</sup> Serial Number:43:e3:71:13:d8:b3:59:14:5d:b7:ce:8c:fd:35:fd:6f:bc:05:8d:45

<sup>#</sup> Subject: CN=vTrus Root CA,O="iTrusChina Co.,Ltd.",C=CN

<sup>#</sup> Not Valid Before: Tue Jul 31 07:24:05 2018

<sup>#</sup> Not Valid After: Fri Jul 31 07:24:05 2043

<sup>#</sup> Fingerprint (SHA-256):

<sup>8</sup>A:71:DE:65:59:33:6F:42:6C:26:E5:38:80:D0:0D:88:A1:8D:A4:C6:A9:1F:0D:CB:61:94:E2:06:C5:C9:63:87

<sup>#</sup> Fingerprint (SHA1): 84:1A:69:FB:F5:CD:1A:25:34:13:3D:E3:F8:FC:B8:99:D0:C9:14:B7

```
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "vTrus Root CA"
CKA CERT SHA1 HASH MULTILINE OCTAL
\204\032\151\373\365\315\032\045\064\023\075\343\370\374\270\231
\320\311\024\267
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\270\311\067\337\372\153\061\204\144\305\352\021\152\033\165\374
END
CKA_ISSUER MULTILINE_OCTAL
\060\103\061\013\060\011\006\003\125\004\006\023\002\103\116\061
\034\060\032\006\003\125\004\012\023\023\151\124\162\165\163\103
\150\151\156\141\040\103\157\056\054\114\164\144\056\061\026\060
\024\006\003\125\004\003\023\015\166\124\162\165\163\040\122\157
\157\164\040\103\101
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\024\103\343\161\023\330\263\131\024\135\267\316\214\375\065
\375\157\274\005\215\105
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "ISRG Root X2"
# Issuer: CN=ISRG Root X2,O=Internet Security Research Group,C=US
# Serial Number:41:d2:9d:d1:72:ea:ee:a7:80:c1:2c:6c:e9:2f:87:52
# Subject: CN=ISRG Root X2,O=Internet Security Research Group,C=US
# Not Valid Before: Fri Sep 04 00:00:00 2020
# Not Valid After: Mon Sep 17 16:00:00 2040
# Fingerprint (SHA-256):
69:72:9B:8E:15:A8:6E:FC:17:7A:57:AF:B7:17:1D:FC:64:AD:D2:8C:2F:CA:8C:F1:50:7E:34:45:3C:CB:14:70
# Fingerprint (SHA1): BD:B1:B9:3C:D5:97:8D:45:C6:26:14:55:F8:DB:95:C7:5A:D1:53:AF
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "ISRG Root X2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\051\060\047\006\003\125\004\012\023\040\111\156\164\145\162\156
\145\164\040\123\145\143\165\162\151\164\171\040\122\145\163\145
```

CKA\_TOKEN CK\_BBOOL CK\_TRUE
CKA PRIVATE CK BBOOL CK FALSE

\141\162\143\150\040\107\162\157\165\160\061\025\060\023\006\003 \125\004\003\023\014\111\123\122\107\040\122\157\157\164\040\130 \062

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\020\101\322\235\321\162\352\356\247\200\301\054\154\351\057\207\122$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\033\060\202\001\241\240\003\002\001\002\002\020\101 \322\235\321\162\352\356\247\200\301\054\154\351\057\207\122\060 \012\006\010\052\206\110\316\075\004\003\003\060\117\061\013\060 \011\006\003\125\004\006\023\002\125\123\061\051\060\047\006\003 \143\165\162\151\164\171\040\122\145\163\145\141\162\143\150\040 \107\162\157\165\160\061\025\060\023\006\003\125\004\003\023\014 \111\123\122\107\040\122\157\157\164\040\130\062\060\036\027\015 \062\060\060\060\071\060\064\060\060\060\060\060\060\060\132\027\015\064 \060\060\071\061\067\061\066\060\060\060\060\132\060\117\061\013 \060\011\006\003\125\004\006\023\002\125\123\061\051\060\047\006 \003\125\004\012\023\040\111\156\164\145\162\156\145\164\040\123  $\\ 145 \\ 143 \\ 165 \\ 162 \\ 151 \\ 164 \\ 171 \\ 040 \\ 122 \\ 145 \\ 163 \\ 145 \\ 141 \\ 162 \\ 143 \\ 150 \\$ \040\107\162\157\165\160\061\025\060\023\006\003\125\004\003\023 \014\111\123\122\107\040\122\157\157\164\040\130\062\060\166\060 \020\006\007\052\206\110\316\075\002\001\006\005\053\201\004\000 \042\003\142\000\004\315\233\325\237\200\203\012\354\011\112\363 \026\112\076\134\317\167\254\336\147\005\015\035\007\266\334\026 \373\132\213\024\333\342\161\140\304\272\105\225\021\211\216\352 \006\337\367\052\026\034\244\271\305\305\062\340\003\340\036\202  $\label{eq:condition} $$ \030\070\213\327\105\330\012\152\156\346\000\167\373\002\121\175$ \042\330\012\156\232\133\167\337\360\372\101\354\071\334\165\312 \150\007\014\037\352\243\102\060\100\060\016\006\003\125\035\017 \001\001\377\004\004\003\002\001\006\060\017\006\003\125\035\023 \001\001\377\004\005\060\003\001\001\377\060\035\006\003\125\035 \016\004\026\004\024\174\102\226\256\336\113\110\073\372\222\370 \236\214\317\155\213\251\162\067\225\060\012\006\010\052\206\110 \316\075\004\003\003\003\150\000\060\145\002\060\173\171\116\106 \120\204\302\104\207\106\033\105\160\377\130\231\336\364\375\244 \322\125\246\040\055\164\326\064\274\101\243\120\137\001\047\126

 $\label{eq:condition} $$ \end{cases} $$ \end{cases$ 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "ISRG Root X2"
- # Issuer: CN=ISRG Root X2,O=Internet Security Research Group,C=US
- # Serial Number:41:d2:9d:d1:72:ea:ee:a7:80:c1:2c:6c:e9:2f:87:52
- # Subject: CN=ISRG Root X2,O=Internet Security Research Group,C=US
- # Not Valid Before: Fri Sep 04 00:00:00 2020
- # Not Valid After: Mon Sep 17 16:00:00 2040
- # Fingerprint (SHA-256):
- 69:72:9B:8E:15:A8:6E:FC:17:7A:57:AF:B7:17:1D:FC:64:AD:D2:8C:2F:CA:8C:F1:50:7E:34:45:3C:CB:14:70
- # Fingerprint (SHA1): BD:B1:B9:3C:D5:97:8D:45:C6:26:14:55:F8:DB:95:C7:5A:D1:53:AF
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA PRIVATE CK BBOOL CK FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "ISRG Root X2"
- CKA CERT SHA1 HASH MULTILINE OCTAL
- \275\261\271\074\325\227\215\105\306\046\024\125\370\333\225\307
- \132\321\123\257

**END** 

# CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 323\236\304\036\043\074\246\337\317\243\176\155\340\024\346\345$ 

END

# CKA\_ISSUER MULTILINE\_OCTAL

\062

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\101\322\235\321\162\352\356\247\200\301\054\154\351\057\207\122

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "HiPKI Root CA - G1"

#

- # Issuer: CN=HiPKI Root CA G1,O="Chunghwa Telecom Co., Ltd.",C=TW
- # Serial Number:2d:dd:ac:ce:62:97:94:a1:43:e8:b0:cd:76:6a:5e:60
- # Subject: CN=HiPKI Root CA G1,O="Chunghwa Telecom Co., Ltd.",C=TW
- # Not Valid Before: Fri Feb 22 09:46:04 2019
- # Not Valid After: Thu Dec 31 15:59:59 2037
- # Fingerprint (SHA-256):

F0:15:CE:3C:C2:39:BF:EF:06:4B:E9:F1:D2:C4:17:E1:A0:26:4A:0A:94:BE:1F:0C:8D:12:18:64:EB:69:49:CC

# Fingerprint (SHA1): 6A:92:E4:A8:EE:1B:EC:96:45:37:E3:29:57:49:CD:96:E3:E5:D2:60

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HiPKI Root CA - G1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000117061\013\060\011\006\003\125\004\006\023\002\124\127\061 $$ \043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150 $$ \167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040 $$ \114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110 $$ \151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107 $$ \061$$ 

**END** 

CKA ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000117061\013\060\011\006\003\125\004\006\023\002\124\127\061 $$ \043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150 $$ \167\141\040\124\145\154\145\143\157\155\040\103\157\056\054\040 $$ \114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110 $$ \151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107 $$ \061$$ 

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\055\335\254\316\142\227\224\241\103\350\260\315\166\152 \136\140

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061\043 \060\041\006\003\125\004\012\014\032\103\150\165\156\147\150\167 \141\040\124\145\154\145\143\157\155\040\103\157\056\054\040\114 \164\144\056\061\033\060\031\006\003\125\004\003\014\022\110\151 \120\113\111\040\122\157\157\164\040\103\101\040\055\040\107\061 \060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001 \001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\001 \000\364\036\177\122\163\062\014\163\344\275\023\164\243\324\060  $\label{eq:condition} $$ \250\320\256\113\330\266\337\165\107\146\364\174\347\071\004\036$ \152\160\040\322\132\107\162\147\125\364\245\350\235\325\036\041 \241\360\147\272\314\041\150\276\104\123\277\215\371\342\334\057  $\label{eq:condition} $$125\310\067\077\037\244\300\234\263\344\167\134\240\106\376\167$ \372\032\240\070\352\355\232\162\336\053\275\224\127\072\272\354 \171\347\137\175\102\144\071\172\046\066\367\044\360\325\057\272 \225\230\021\146\255\227\065\326\165\001\200\340\257\364\204\141 \214\015\036\137\174\207\226\136\101\257\353\207\352\370\135\361  $\label{eq:condition} $$ \056\210\005\076\114\042\273\332\037\052\335\122\106\144\071\363$ \102\316\331\236\014\263\260\167\227\144\234\300\364\243\056\037 \225\007\260\027\337\060\333\000\030\226\114\241\201\113\335\004 \155\123\243\075\374\007\254\324\305\067\202\353\344\225\010\031 \050\202\322\102\072\243\330\123\354\171\211\140\110\140\310\162 \222\120\334\003\217\203\077\262\102\127\132\333\152\351\021\227  $\label{eq:condition} $$ 35 \times 050 \times 074 \times 060 \times 114 \times 253 \times 343 \times 02 \times 61 \times 105 \times 104 \times 107 \times 037 \times 340 \times 122 \times 105 \times 1$ \026\007\226\322\041\017\123\300\355\251\176\324\116\354\233\011 \354\257\102\254\060\326\277\321\020\105\340\246\026\262\245\305 \323\117\163\224\063\161\002\241\152\243\326\063\227\117\041\143 \036\133\217\331\301\136\105\161\167\017\201\135\137\041\232\255  $\label{eq:condition} $$ \203\314\372\136\326\215\043\137\033\075\101\257\040\165\146\132 $$$ \112\366\237\373\253\030\367\161\300\266\035\061\354\073\040\353 \313\342\270\365\256\222\262\367\341\204\113\362\242\362\223\232  $\\ \langle 042 \rangle 236 \rangle 323 \rangle 024 \rangle 157 \rangle 066 \rangle 124 \rangle 275 \rangle 037 \rangle 136 \rangle 131 \rangle 025 \rangle 271 \rangle 163 \rangle 250 \rangle 301$ \174\157\173\142\351\026\154\107\132\145\363\016\021\233\106\331 \375\155\334\326\234\300\264\175\245\260\335\077\126\157\241\371 \366\344\022\110\375\006\177\022\127\266\251\043\117\133\003\303 \340\161\052\043\267\367\260\261\073\274\230\275\326\230\250\014 \153\366\216\022\147\246\362\262\130\344\002\011\023\074\251\273 \020\264\322\060\105\361\354\367\000\021\337\145\370\334\053\103 \125\277\026\227\304\017\325\054\141\204\252\162\206\376\346\072  $\label{eq:condition} $$ 176\302\077\175\356\374\057\024\076\346\205\335\120\157\267\111 $$$ \355\002\003\001\000\001\243\102\060\100\060\017\006\003\125\035 \023\001\001\377\004\005\060\003\001\001\377\060\035\006\003\125 \035\016\004\026\004\024\362\167\027\372\136\250\376\366\075\161 \325\150\272\311\106\014\070\330\257\260\060\016\006\003\125\035 \017\001\001\377\004\004\003\002\001\206\060\015\006\011\052\206 \360\165\334\160\004\343\377\252\165\324\161\242\313\236\217\250 \251\323\257\165\307\124\317\072\034\004\231\042\254\304\021\342 \357\063\112\246\043\035\016\015\107\330\067\307\157\257\064\177

\117\201\153\065\117\351\162\245\061\342\170\347\367\116\224\030 \133\100\175\317\153\041\124\206\346\225\172\373\306\312\352\234  $\label{eq:condition} $$ \frac{110}{16}\frac{127}{011}\frac{35}{057}\frac{254}{364}\frac{245}{264}\frac{227}{063}\frac{130}{325}\frac{254}{171} $$ \251\314\137\371\205\372\122\305\215\370\221\024\353\072\015\027 \320\122\302\173\343\302\163\216\106\170\006\070\054\350\134\332 \146\304\364\244\360\126\031\063\051\132\145\222\005\107\106\112 \253\204\303\036\047\241\037\021\222\231\047\165\223\017\274\066  $\label{eq:condition} $$ \073\227\127\217\046\133\014\273\234\017\324\156\060\007\324\334$ \137\066\150\146\071\203\226\047\046\212\310\304\071\376\232\041 \157\325\162\206\351\177\142\345\227\116\320\044\320\100\260\320  $\label{eq:condition} $$ 165\010\216\275\150\356\010\327\156\174\020\160\106\033\174\340 $$$ \210\262\236\162\206\231\001\343\277\237\111\031\264\045\276\126 \145\256\027\143\345\036\337\350\377\107\245\277\341\046\005\204 \344\260\300\257\347\010\231\250\014\136\046\200\105\324\370\150  $\label{eq:condition} $$ \057\226\217\256\342\112\034\234\026\014\023\157\070\207\366\273$ \310\064\137\222\003\121\171\160\246\337\313\365\231\115\171\315  $\label{eq:condition} $$ \frac{116}{274}\frac{237}{103}\frac{116}{153}\frac{056}{053}\frac{370}{152}\frac{163}{214}\frac{272}{305} $$$ \065\357\071\152\101\036\317\161\250\242\262\206\007\133\072\311 \341\357\077\145\004\200\107\062\104\160\225\116\061\147\152\164 \133\020\105\165\352\260\237\320\346\065\376\116\237\213\314\053 \222\105\133\156\045\140\205\106\315\321\252\260\166\146\223\167  $\label{eq:condition} $$ \226\276\203\276\070\266\044\116\046\013\314\355\172\126\032\340 $$$  $\label{eq:condition} $$ \frac{351}{132}\frac{306}{144}\frac{255}{114}\frac{172}{000}\frac{110}{104}\frac{57}{271}\frac{273}{023}\frac{076}{100} $$$ \276\025\170\235\205\201\112\052\127\336\325\031\103\332\333\312 \133\107\206\203\013\077\266\015\166\170\163\171\042\136\261\200 \037\317\276\321\077\126\020\230\053\225\207\241\037\235\144\024 \140\071\054\263\000\125\056\344\365\263\016\127\304\221\101\000 \234\077\350\245\337\352\366\377\310\360\255\155\122\250\027\253 \233\141\374\022\121\065\344\045\375\257\252\152\206\071 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "HiPKI Root CA - G1"
```

F0:15:CE:3C:C2:39:BF:EF:06:4B:E9:F1:D2:C4:17:E1:A0:26:4A:0A:94:BE:1F:0C:8D:12:18:64:EB:69:49:CC

# Fingerprint (SHA1): 6A:92:E4:A8:EE:1B:EC:96:45:37:E3:29:57:49:CD:96:E3:E5:D2:60

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "HiPKI Root CA - G1"

<sup>#</sup> Issuer: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW

<sup>#</sup> Serial Number:2d:dd:ac:ce:62:97:94:a1:43:e8:b0:cd:76:6a:5e:60

<sup>#</sup> Subject: CN=HiPKI Root CA - G1,O="Chunghwa Telecom Co., Ltd.",C=TW

<sup>#</sup> Not Valid Before: Fri Feb 22 09:46:04 2019

<sup>#</sup> Not Valid After: Thu Dec 31 15:59:59 2037

<sup>#</sup> Fingerprint (SHA-256):

```
\label{eq:condition} $$ \frac{354}{226}105\\067\\343\\051\\127\\111\\315\\226
\343\345\322\140
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\151\105\337\026\145\113\350\150\232\217\166\137\377\200\236\323
END
CKA ISSUER MULTILINE OCTAL
\060\117\061\013\060\011\006\003\125\004\006\023\002\124\127\061
\043\060\041\006\003\125\004\012\014\032\103\150\165\156\147\150
\114\164\144\056\061\033\060\031\006\003\125\004\003\014\022\110
\151\120\113\111\040\122\157\157\164\040\103\101\040\055\040\107
\061
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\055\335\254\316\142\227\224\241\103\350\260\315\166\152
\136\140
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "GlobalSign ECC Root CA - R4"
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
# Serial Number:02:03:e5:7e:f5:3f:93:fd:a5:09:21:b2:a6
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
# Not Valid Before: Tue Nov 13 00:00:00 2012
# Not Valid After: Tue Jan 19 03:14:07 2038
# Fingerprint (SHA-256):
B0:85:D7:0B:96:4F:19:1A:73:E4:AF:0D:54:AE:7A:0E:07:AA:FD:AF:9B:71:DD:08:62:13:8A:B7:32:5A:24:A2
# Fingerprint (SHA1): 6B:A0:B0:98:E1:71:EF:5A:AD:FE:48:15:80:77:10:F4:BD:6F:0B:28
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R4"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\021\006\003\125\004\003\023\012\107\154\157\142\141\154\123\151
\147\156
```

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\015\002\03\345\176\365\077\223\375\245\011\041\262\246$ END$ 

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\202\001\334\060\202\001\203\240\003\002\001\002\002\0015\002$ \003\345\176\365\077\223\375\245\011\041\262\246\060\012\006\010 \052\206\110\316\075\004\003\002\060\120\061\044\060\042\006\003 \125\004\013\023\033\107\154\157\142\141\154\123\151\147\156\040 \105\103\103\040\122\157\157\164\040\103\101\040\055\040\122\064 \154\123\151\147\156\061\023\060\021\006\003\125\004\003\023\012 \107\154\157\142\141\154\123\151\147\156\060\036\027\015\061\062  $\label{eq:condition} $$ \061\061\063\060\060\060\060\060\132\027\015\063\070\060 $$$ \061\061\071\060\063\061\064\060\067\132\060\120\061\044\060\042 \006\003\125\004\013\023\033\107\154\157\142\141\154\123\151\147 \156\040\105\103\103\040\122\157\157\164\040\103\101\040\055\040 \122\064\061\023\060\021\006\003\125\004\012\023\012\107\154\157 \142\141\154\123\151\147\156\061\023\060\021\006\003\125\004\003 \023\012\107\154\157\142\141\154\123\151\147\156\060\131\060\023 \006\007\052\206\110\316\075\002\001\006\010\052\206\110\316\075 \056\071\031\034\003\244\256\232\345\071\007\011\026\312\143\261 \271\206\370\212\127\301\127\316\102\372\163\241\367\145\102\377 \036\301\000\262\156\163\016\377\307\041\345\030\244\252\331\161 \077\250\324\271\316\214\035\243\102\060\100\060\016\006\003\125 \035\017\001\001\377\004\004\003\002\001\206\060\017\006\003\125 \035\023\001\001\377\004\005\060\003\001\001\377\060\035\006\003 \125\035\016\004\026\004\024\124\260\173\255\105\270\342\100\177 \373\012\156\373\276\063\311\074\243\204\325\060\012\006\010\052 \206\110\316\075\004\003\002\003\107\000\060\104\002\040\042\117 \164\162\271\140\257\361\346\234\240\026\005\120\137\303\136\073 \156\141\164\357\276\001\304\276\030\110\131\141\202\062\002\040 \046\235\124\143\100\336\067\140\120\317\310\330\355\235\202\256 \067\230\274\243\217\114\114\251\064\053\154\357\373\225\233\046 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "GlobalSign ECC Root CA - R4"
# Issuer: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
# Serial Number:02:03:e5:7e:f5:3f:93:fd:a5:09:21:b2:a6
# Subject: CN=GlobalSign,O=GlobalSign,OU=GlobalSign ECC Root CA - R4
# Not Valid Before: Tue Nov 13 00:00:00 2012
# Not Valid After: Tue Jan 19 03:14:07 2038
# Fingerprint (SHA-256):
B0:85:D7:0B:96:4F:19:1A:73:E4:AF:0D:54:AE:7A:0E:07:AA:FD:AF:9B:71:DD:08:62:13:8A:B7:32:5A:24:A2
# Fingerprint (SHA1): 6B:A0:B0:98:E1:71:EF:5A:AD:FE:48:15:80:77:10:F4:BD:6F:0B:28
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GlobalSign ECC Root CA - R4"
CKA CERT SHA1 HASH MULTILINE OCTAL
\153\240\260\230\341\161\357\132\255\376\110\025\200\167\020\364
\275\157\013\050
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\046\051\370\155\341\210\277\242\145\177\252\304\315\017\177\374
END
CKA_ISSUER MULTILINE_OCTAL
\060\120\061\044\060\042\006\003\125\004\013\023\033\107\154\157
\142\141\154\123\151\147\156\040\105\103\103\040\122\157\157\164
\040\103\101\040\055\040\122\064\061\023\060\021\006\003\125\004
\012\023\012\107\154\157\142\141\154\123\151\147\156\061\023\060
\label{eq:condition} $$ \004\003\125\004\003\023\012\107\154\157\142\141\154\123\151 $$
\147\156
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\label{eq:condition} $$ \002\015\002\003\345\176\365\077\223\375\245\011\041\262\246 $$
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "GTS Root R1"
# Issuer: CN=GTS Root R1,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:93:6f:31:b0:13:49:88:6b:a2:17
# Subject: CN=GTS Root R1,O=Google Trust Services LLC,C=US
# Not Valid Before: Wed Jun 22 00:00:00 2016
# Not Valid After: Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
D9:47:43:2A:BD:E7:B7:FA:90:FC:2E:6B:59:10:1B:12:80:E0:E1:C7:E4:E4:0F:A3:C6:88:7F:FF:57:A7:F4:CF
```

# Fingerprint (SHA1): E5:8C:1C:C4:91:3B:38:63:4B:E9:10:6E:E3:AD:8E:6B:9D:D9:81:4A

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA LABEL UTF8 "GTS Root R1"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\015\002\03\345\223\157\061\260\023\111\210\153\242\027 $$$ 

**END** 

## CKA VALUE MULTILINE OCTAL

\060\202\005\127\060\202\003\077\240\003\002\001\002\002\015\002  $\label{eq:condition} $$ \003\345\223\157\061\260\023\111\210\153\242\027\060\015\006\011 $$$ \052\206\110\206\367\015\001\001\014\005\000\060\107\061\013\060 \011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003 \125\004\012\023\031\107\157\157\147\154\145\040\124\162\165\163 \164\040\123\145\162\166\151\143\145\163\040\114\114\103\061\024 \060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157 \164\040\122\061\060\036\027\015\061\066\060\066\062\062\060\060 \060\060\060\060\132\027\015\063\066\060\066\062\062\062\060\060 \060\060\060\132\060\107\061\013\060\011\006\003\125\004\006\023 \002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157 \157\147\154\145\040\124\162\165\163\164\040\123\145\162\166\151 \143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003  $\label{eq:condition} $$ \023\013\107\124\123\040\122\157\157\164\040\122\061\060\202\002$ \042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  $\label{eq:condition} $$ \003\202\002\017\000\060\202\002\012\002\202\002\001\000\266\021 $$$ \002\213\036\343\241\167\233\073\334\277\224\076\267\225\247\100 \074\241\375\202\371\175\062\006\202\161\366\366\214\177\373\350 \333\274\152\056\227\227\243\214\113\371\053\366\261\371\316\204 \035\261\371\305\227\336\357\271\362\243\351\274\022\211\136\247 \252\122\253\370\043\047\313\244\261\234\143\333\327\231\176\360 \012\136\353\150\246\364\306\132\107\015\115\020\063\343\116\261

\023\243\310\030\154\113\354\374\011\220\337\235\144\051\045\043 \007\241\264\322\075\056\140\340\317\322\011\207\273\315\110\360 \115\302\302\172\210\212\273\272\317\131\031\326\257\217\260\007 \260\236\061\361\202\301\300\337\056\246\155\154\031\016\265\330 \176\046\032\105\003\075\260\171\244\224\050\255\017\177\046\345  $\label{eq:condition} $$ \250\010\376\226\350\074\150\224\123\356\203\072\210\053\025\226$ \011\262\340\172\214\056\165\326\234\353\247\126\144\217\226\117 \150\256\075\227\302\204\217\300\274\100\300\013\134\275\366\207 \263\065\154\254\030\120\177\204\340\114\315\222\323\040\351\063 \274\122\231\257\062\265\051\263\045\052\264\110\371\162\341\312 \144\367\346\202\020\215\350\235\302\212\210\372\070\146\212\374 \143\371\001\371\170\375\173\134\167\372\166\207\372\354\337\261 \016\171\225\127\264\275\046\357\326\001\321\353\026\012\273\216  $\label{eq:condition} $$ \013\265\305\305\212\125\253\323\254\352\221\113\051\314\031\244$$ \062\045\116\052\361\145\104\320\002\316\252\316\111\264\352\237 \174\203\260\100\173\347\103\253\247\154\243\217\175\211\201\372 \114\245\377\325\216\303\316\113\340\265\330\263\216\105\317\166 \300\355\100\053\375\123\017\260\247\325\073\015\261\212\242\003 \336\061\255\314\167\352\157\173\076\326\337\221\042\022\346\276 \372\330\062\374\020\143\024\121\162\336\135\326\026\223\275\051 \150\063\357\072\146\354\007\212\046\337\023\327\127\145\170\047 \336\136\111\024\000\242\000\177\232\250\041\266\251\261\225\260  $\label{eq:condition} $$ 245\271\015\026\021\332\307\154\110\074\100\340\176\015\132\315$$ \126\074\321\227\005\271\313\113\355\071\113\234\304\077\322\125 \023\156\044\260\326\161\372\364\301\272\314\355\033\365\376\201 \101\330\000\230\075\072\310\256\172\230\067\030\005\225\002\003 \001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001  $\label{eq:condition} $$ \sqrt{377} \cdot 004 \cdot 004 \cdot 003 \cdot 002 \cdot 001 \cdot 206 \cdot 060 \cdot 017 \cdot 006 \cdot 003 \cdot 125 \cdot 035 \cdot 023 \cdot 001 \cdot 001$ \377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004 \026\004\024\344\257\053\046\161\032\053\110\047\205\057\122\146  $\label{eq:condition} $$ \054\357\360\211\023\161\076\060\015\006\011\052\206\110\206\367$ \015\001\001\001\014\005\000\003\202\002\001\000\237\252\102\046\333 \013\233\276\377\036\226\222\056\076\242\145\112\152\230\272\042 \313\175\301\072\330\202\012\006\306\366\245\336\300\116\207\146 \171\241\371\246\130\234\252\371\265\346\140\347\340\350\261\036 \102\101\063\013\067\075\316\211\160\025\312\265\044\250\317\153 \265\322\100\041\230\317\042\064\317\073\305\042\204\340\305\016 \212\174\135\210\344\065\044\316\233\076\032\124\036\156\333\262  $\label{eq:condition} $$ \207\247\374\363\372\201\125\024\142\012\131\251\042\005\061\076$ \202\326\356\333\127\064\274\063\225\323\027\033\350\047\242\213 \173\116\046\032\172\132\144\266\321\254\067\361\375\240\363\070 \354\162\360\021\165\235\313\064\122\215\346\166\153\027\306\337 \206\253\047\216\111\053\165\146\201\020\041\246\352\076\364\256 \045\377\174\025\336\316\214\045\077\312\142\160\012\367\057\011 \146\007\310\077\034\374\360\333\105\060\337\142\210\301\265\017 \235\303\237\112\336\131\131\107\305\207\042\066\346\202\247\355 \012\271\342\007\240\215\173\172\112\074\161\322\342\003\241\037  $\label{eq:condition} $$ \062\007\335\033\344\102\316\014\000\105\141\200\265\013\040\131 $$$ 

\051\170\275\371\125\313\143\305\074\114\364\266\377\333\152\137 \061\153\231\236\054\301\153\120\244\327\346\030\024\275\205\077 \147\253\106\237\240\377\102\247\072\177\134\313\135\260\160\035 \053\064\365\324\166\011\014\353\170\114\131\005\363\063\102\303 \141\025\020\033\167\115\316\042\214\324\205\362\105\175\267\123 \352\357\100\132\224\012\134\040\137\116\100\135\142\042\166\337 \377\316\141\275\214\043\170\322\067\002\340\216\336\321\021\067 \211\366\277\355\111\007\142\256\222\354\100\032\257\024\011\331 \320\116\262\242\367\276\356\356\330\377\334\032\055\336\270\066 \161\342\374\171\267\224\045\321\110\163\133\241\065\347\263\231 \147\165\301\031\072\053\107\116\323\102\216\375\061\310\026\146  $\label{eq:condition} $$ 32\32\014\074\333\263\216\311\241\015\200\017\173\026\167\024 $$$ \277\377\333\011\224\262\223\274\040\130\025\351\333\161\103\363 \336\020\303\000\334\250\052\225\266\302\326\077\220\153\166\333 \154\376\214\274\362\160\065\014\334\231\031\065\334\327\310\106 \143\325\066\161\256\127\373\267\202\155\334

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "GTS Root R1"
- # Issuer: CN=GTS Root R1,O=Google Trust Services LLC,C=US
- # Serial Number:02:03:e5:93:6f:31:b0:13:49:88:6b:a2:17
- # Subject: CN=GTS Root R1,O=Google Trust Services LLC,C=US
- # Not Valid Before: Wed Jun 22 00:00:00 2016 # Not Valid After : Sun Jun 22 00:00:00 2036
- # Fingerprint (SHA-256):

D9:47:43:2A:BD:E7:B7:FA:90:FC:2E:6B:59:10:1B:12:80:E0:E1:C7:E4:E4:0F:A3:C6:88:7F:FF:57:A7:F4:CF

# Fingerprint (SHA1): E5:8C:1C:C4:91:3B:38:63:4B:E9:10:6E:E3:AD:8E:6B:9D:D9:81:4A

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "GTS Root R1"

CKA CERT SHA1 HASH MULTILINE OCTAL

\345\214\034\304\221\073\070\143\113\351\020\156\343\255\216\153 \235\331\201\112

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\005\376\320\277\161\250\243\166\143\332\001\340\330\122\334\100

END

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000107\061\013\060\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122\061$ 

```
END
```

CKA SERIAL NUMBER MULTILINE OCTAL

\002\015\002\003\345\223\157\061\260\023\111\210\153\242\027

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR

CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "GTS Root R2"

#

- # Issuer: CN=GTS Root R2,O=Google Trust Services LLC,C=US
- # Serial Number:02:03:e5:ae:c5:8d:04:25:1a:ab:11:25:aa
- # Subject: CN=GTS Root R2,O=Google Trust Services LLC,C=US
- # Not Valid Before: Wed Jun 22 00:00:00 2016
- # Not Valid After: Sun Jun 22 00:00:00 2036
- # Fingerprint (SHA-256):

8D:25:CD:97:22:9D:BF:70:35:6B:DA:4E:B3:CC:73:40:31:E2:4C:F0:0F:AF:CF:D3:2D:C7:6E:B5:84:1C:7E:A8

# Fingerprint (SHA1): 9A:44:49:76:32:DB:DE:FA:D0:BC:FB:5A:7B:17:BD:9E:56:09:24:94

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "GTS Root R2"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$ 

\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145

\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040

\123\040\122\157\157\164\040\122\062

**END** 

CKA\_ID UTF8 "0"

## CKA ISSUER MULTILINE OCTAL

\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061

 $\\ \\042\\060\\040\\006\\003\\125\\004\\012\\023\\031\\107\\157\\157\\147\\154\\145$ 

\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040

\123\040\122\157\157\164\040\122\062

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\015\002\003\345\256\305\215\004\045\032\253\021\045\252

**END** 

## CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\202\005\127\060\202\003\077\240\003\002\001\002\002\001\5\002$ 

\003\345\256\305\215\004\045\032\253\021\045\252\060\015\006\011

\052\206\110\206\367\015\001\001\014\005\000\060\107\061\013\060

\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003 \125\004\012\023\031\107\157\157\147\154\145\040\124\162\165\163 \164\040\123\145\162\166\151\143\145\163\040\114\114\103\061\024 \060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157 \164\040\122\062\060\036\027\015\061\066\060\066\062\062\060\060 \060\060\060\060\132\027\015\063\066\060\066\062\062\060\060\060 \060\060\060\132\060\107\061\013\060\011\006\003\125\004\006\023 \002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157 \143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003  $\label{eq:condition} $$ \023\013\107\124\123\040\122\157\157\164\040\122\062\060\202\002$  $\\ \langle 042 \rangle 060 \rangle 015 \rangle 006 \rangle 011 \rangle 052 \rangle 206 \rangle 110 \rangle 206 \rangle 367 \rangle 015 \rangle 001 \rangle 001 \rangle 005 \rangle 000$ \003\202\002\017\000\060\202\002\012\002\202\002\001\000\316\336 \375\246\373\354\354\024\064\074\007\006\132\154\131\367\031\065 \335\367\301\235\125\252\323\315\073\244\223\162\357\012\372\155 \235\366\360\205\200\133\241\110\122\237\071\305\267\356\050\254 \357\313\166\150\024\271\337\255\001\154\231\037\304\042\035\237 \376\162\167\340\054\133\257\344\004\277\117\162\240\032\064\230 \350\071\150\354\225\045\173\166\241\346\151\271\205\031\275\211 \214\376\255\355\066\352\163\274\377\203\342\313\175\301\322\316 \112\263\215\005\236\213\111\223\337\301\133\320\156\136\360\056 \060\056\202\374\372\274\264\027\012\110\345\210\233\305\233\153 \336\260\312\264\003\360\332\364\220\270\145\144\367\134\114\255 \350\176\146\136\231\327\270\302\076\310\320\023\235\255\356\344 \105\173\211\125\367\212\037\142\122\204\022\263\302\100\227\343 \212\037\107\221\246\164\132\322\370\261\143\050\020\270\263\011 \270\126\167\100\242\046\230\171\306\376\337\045\356\076\345\240  $\label{eq:condition} $$ \frac{177}324\\141\\017\\121\\113\\074\\077\\214\\332\\341\\160\\164\\330\\302\\150$ \241\371\301\014\351\241\342\177\273\125\074\166\006\356\152\116 \314\222\210\060\115\232\275\117\013\110\232\204\265\230\243\325  $\label{eq:condition} $$ 373\163\301\127\141\335\050\126\165\023\256\207\216\347\014\121 $$$ \011\020\165\210\114\274\215\371\173\074\324\042\110\037\052\334 \353\153\273\104\261\313\063\161\062\106\257\255\112\361\214\350 \164\072\254\347\032\042\163\200\322\060\367\045\102\307\042\073 \073\022\255\226\056\306\303\166\007\252\040\267\065\111\127\351 \222\111\350\166\026\162\061\147\053\226\176\212\243\307\224\126 \042\277\152\113\176\001\041\262\043\062\337\344\232\104\155\131 \133\135\365\000\240\034\233\306\170\227\215\220\377\233\310\252 \264\257\021\121\071\136\331\373\147\255\325\133\021\235\062\232  $\label{eq:condition} $$ \033\275\325\272\133\245\311\313\045\151\123\125\047\134\340\312$ \066\313\210\141\373\036\267\320\313\356\026\373\323\246\114\336 \222\245\324\342\337\365\006\124\336\056\235\113\264\223\060\252 \201\316\335\032\334\121\163\015\117\160\351\345\266\026\041\031 \171\262\346\211\013\165\144\312\325\253\274\011\301\030\241\377 \324\124\241\205\074\375\024\044\003\262\207\323\244\267\002\003 \001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001 \377\004\004\003\002\001\206\060\017\006\003\125\035\023\001\001 \377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004

\026\004\024\273\377\312\216\043\237\117\231\312\333\342\150\246 \245\025\047\027\036\331\016\060\015\006\011\052\206\110\206\367 \276\241\237\331\047\114\013\334\027\230\021\152\210\336\075\346 \161\126\162\262\236\032\116\234\325\053\230\044\135\233\153\173 \260\063\202\011\275\337\045\106\352\230\236\266\033\376\203\074 \322\142\141\301\004\355\316\340\305\311\310\023\023\125\347\250 \143\255\214\173\001\376\167\060\341\316\150\233\005\370\022\356  $\label{eq:condition} $$ \frac{171 \cdot 061 \cdot 240 \cdot 101 \cdot 105 \cdot 065 \cdot 050 \cdot 012 \cdot 161 \cdot 244 \cdot 044 \cdot 117 \cdot 214 \cdot 334 \cdot 074 \cdot 202}{171 \cdot 061 \cdot 240 \cdot 101 \cdot 105 \cdot 065 \cdot 050 \cdot 012 \cdot 161 \cdot 244 \cdot 044 \cdot 117 \cdot 214 \cdot 334 \cdot 074 \cdot 202}$ \007\137\146\334\175\020\376\014\141\263\005\225\356\341\256\201  $\label{eq:condition} $$ \017\250\370\307\217\115\250\043\002\046\153\035\203\122\125\316$$ \265\057\000\312\200\100\340\341\164\254\140\365\207\200\235\256 \066\144\221\135\260\150\030\352\212\141\311\167\250\227\304\311  $\label{eq:condition} $$ 307\245\374\125\113\363\360\177\271\145\075\047\150\320\314\153$ \372\123\235\341\221\032\311\135\032\226\155\062\207\355\003\040 \310\002\316\132\276\331\352\375\262\115\304\057\033\337\137\172  $\label{eq:condition} $$ 365\370\213\306\356\061\072\045\121\125\147\215\144\062\173\351 $$$ \236\303\202\272\052\055\351\036\264\340\110\006\242\374\147\257 \037\042\002\163\373\040\012\257\235\124\113\241\315\377\140\107 \260\077\135\357\033\126\275\227\041\226\055\012\321\136\235\070 \002\107\154\271\364\366\043\045\270\240\152\232\053\167\010\372  $\label{eq:condition} $$ 304 \times 61 \times 050 \times 220 \times 61 \times 010 \times 074 \times 42 \times 176 \times 252 \times 327 \times 075 \times 157 \times 272 \times 061 \times 100 \times 1$  $\label{eq:condition} $$ \frac{210}{012}\frac{353}{047}\frac{265}{241}\frac{111}{356}\frac{240}{105}\frac{124}{173}\frac{346}{047}\frac{145}{145} $$$ \231\040\041\250\243\274\373\030\226\273\122\157\014\355\203\121 \114\351\131\342\040\140\305\302\145\222\202\214\363\020\037\016 \212\227\276\167\202\155\077\217\035\135\274\111\047\275\314\117 \017\341\316\166\206\004\043\305\300\214\022\133\375\333\204\240 \044\361\110\377\144\174\320\276\134\026\321\357\231\255\300\037 \373\313\256\274\070\042\006\046\144\332\332\227\016\077\050\025 \104\250\117\000\312\360\232\314\317\164\152\264\076\074\353\225 \354\265\323\132\330\201\231\351\103\030\067\353\263\273\321\130 \142\101\363\146\322\217\252\170\225\124\040\303\132\056\164\053 \325\321\276\030\151\300\254\325\244\317\071\272\121\204\003\145 \351\142\300\142\376\330\115\125\226\342\320\021\372\110\064\021 \354\236\355\005\035\344\310\326\035\206\313

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "GTS Root R2"
```

8D:25:CD:97:22:9D:BF:70:35:6B:DA:4E:B3:CC:73:40:31:E2:4C:F0:0F:AF:CF:D3:2D:C7:6E:B5:84:1C:7E:A8

<sup>#</sup> Issuer: CN=GTS Root R2,O=Google Trust Services LLC,C=US

<sup>#</sup> Serial Number:02:03:e5:ae:c5:8d:04:25:1a:ab:11:25:aa

<sup>#</sup> Subject: CN=GTS Root R2,O=Google Trust Services LLC,C=US

<sup>#</sup> Not Valid Before: Wed Jun 22 00:00:00 2016

<sup>#</sup> Not Valid After : Sun Jun 22 00:00:00 2036

<sup>#</sup> Fingerprint (SHA-256):

```
# Fingerprint (SHA1): 9A:44:49:76:32:DB:DE:FA:D0:BC:FB:5A:7B:17:BD:9E:56:09:24:94
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R2"
CKA CERT SHA1 HASH MULTILINE OCTAL
\232\104\111\166\062\333\336\372\320\274\373\132\173\027\275\236
\126\011\044\224
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
END
CKA_ISSUER MULTILINE_OCTAL
\label{eq:condition} $$ \060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\062
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\015\002\003\345\256\305\215\004\045\032\253\021\045\252
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "GTS Root R3"
# Issuer: CN=GTS Root R3,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:b8:82:eb:20:f8:25:27:6d:3d:66
# Subject: CN=GTS Root R3,O=Google Trust Services LLC,C=US
# Not Valid Before: Wed Jun 22 00:00:00 2016
# Not Valid After: Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
34:D8:A7:3E:E2:08:D9:BC:DB:0D:95:65:20:93:4B:4E:40:E6:94:82:59:6E:8B:6F:73:C8:42:6B:01:0A:6F:48
# Fingerprint (SHA1): ED:E5:71:80:2B:C8:92:B9:5B:83:3C:D2:32:68:3F:09:CD:A0:1E:46
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "GTS Root R3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
```

\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040 \114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124 \123\040\122\157\157\164\040\122\063

**END** 

CKA ID UTF8 "0"

## CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00107\061\013\060\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145\040\124\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122\063$ 

**END** 

## CKA SERIAL NUMBER MULTILINE OCTAL

 $\label{eq:condition} $$ \002\015\002\03\345\270\202\353\040\370\045\047\155\075\146$$  END

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \0.060\202\001\000\202\001\216\240\003\002\001\0002\000\001\5\0002$ \003\345\270\202\353\040\370\045\047\155\075\146\060\012\006\010 \052\206\110\316\075\004\003\003\060\107\061\013\060\011\006\003 \125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012 \023\031\107\157\157\147\154\145\040\124\162\165\163\164\040\123 \145\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006 \132\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123 \061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154 \145\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163 \040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107 \124\123\040\122\157\157\164\040\122\063\060\166\060\020\006\007  $\label{eq:condition} $$ \052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142 $$$ \000\004\037\117\063\207\063\051\212\241\204\336\313\307\041\130 \101\211\352\126\235\053\113\205\306\035\114\047\274\177\046\121 \162\157\342\237\326\243\312\314\105\024\106\213\255\357\176\206 \214\354\261\176\057\377\251\161\235\030\204\105\004\101\125\156 \053\352\046\177\273\220\001\343\113\031\272\344\124\226\105\011 \261\325\154\221\104\255\204\023\216\232\214\015\200\014\062\366 \340\047\243\102\060\100\060\016\006\003\125\035\017\001\001\377  $\label{eq:condition} $$ \004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377 $$$  $\\ \\004\\\\005\\\\006\\\\003\\\\001\\\\001\\\\377\\\\060\\\\035\\\\006\\\\003\\\\125\\\\035\\\\016\\\\004\\\\026$ \004\024\301\361\046\272\240\055\256\205\201\317\323\361\052\022 \275\270\012\147\375\274\060\012\006\010\052\206\110\316\075\004 \003\003\003\151\000\060\146\002\061\000\366\341\040\225\024\173 \124\243\220\026\021\277\204\310\352\157\153\027\236\036\106\230 \040\233\237\323\015\331\254\323\057\315\174\370\133\056\125\273 \277\335\222\367\244\014\334\061\341\242\002\061\000\374\227\146 \146\345\103\026\023\203\335\307\337\057\276\024\070\355\001\316 \261\027\032\021\165\351\275\003\217\046\176\204\345\311\140\246

```
END
CKA_NSS_MOZILLA_CA_POLICY CK_BBOOL CK_TRUE
CKA_NSS_SERVER_DISTRUST_AFTER CK_BBOOL CK_FALSE
CKA_NSS_EMAIL_DISTRUST_AFTER CK_BBOOL CK_FALSE
# Trust for "GTS Root R3"
# Issuer: CN=GTS Root R3,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:b8:82:eb:20:f8:25:27:6d:3d:66
# Subject: CN=GTS Root R3,O=Google Trust Services LLC,C=US
# Not Valid Before: Wed Jun 22 00:00:00 2016
# Not Valid After: Sun Jun 22 00:00:00 2036
# Fingerprint (SHA-256):
34:D8:A7:3E:E2:08:D9:BC:DB:0D:95:65:20:93:4B:4E:40:E6:94:82:59:6E:8B:6F:73:C8:42:6B:01:0A:6F:48
# Fingerprint (SHA1): ED:E5:71:80:2B:C8:92:B9:5B:83:3C:D2:32:68:3F:09:CD:A0:1E:46
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "GTS Root R3"
CKA CERT SHA1 HASH MULTILINE OCTAL
\label{eq:condition} $$ \frac{355}{345}161\\200\\053\\310\\222\\271\\133\\203\\074\\322\\062\\150\\077\\011
\315\240\036\106
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\076\347\235\130\002\224\106\121\224\345\340\042\112\213\347\163
END
CKA_ISSUER MULTILINE_OCTAL
\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145
\label{eq:condition} $$ \040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040$$
\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124
\123\040\122\157\157\164\040\122\063
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\015\002\003\345\270\202\353\040\370\045\047\155\075\146
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
#
# Certificate "GTS Root R4"
# Issuer: CN=GTS Root R4,O=Google Trust Services LLC,C=US
# Serial Number:02:03:e5:c0:68:ef:63:1a:9c:72:90:50:52
# Subject: CN=GTS Root R4,O=Google Trust Services LLC,C=US
```

\225\327\124\131\267\347\021\054\211\324\271\356\027

# Not Valid Before: Wed Jun 22 00:00:00 2016

# Not Valid After: Sun Jun 22 00:00:00 2036

# Fingerprint (SHA-256):

34:9D:FA:40:58:C5:E2:63:12:3B:39:8A:E7:95:57:3C:4E:13:13:C8:3F:E6:8F:93:55:6C:D5:E8:03:1B:3C:7D

# Fingerprint (SHA1): 77:D3:03:67:B5:E0:0C:15:F6:0C:38:61:DF:7C:E1:3B:92:46:4D:47

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "GTS Root R4"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

\123\040\122\157\157\164\040\122\064

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \00107\061\013\060\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145\040\124\162\165\163\164\040\123\145\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122\064$ 

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

 $\label{eq:condition} $$ \002\015\002\03\345\300\150\357\143\032\234\162\220\120\122 $$$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \0.002\0.011\0.002\0.01\2.001\2.003\0.002\0.01\0.002\0.001\0.002$ \003\345\300\150\357\143\032\234\162\220\120\122\060\012\006\010 \052\206\110\316\075\004\003\003\060\107\061\013\060\011\006\003 \125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012 \023\031\107\157\157\147\154\145\040\124\162\165\163\164\040\123 \145\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006 \003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122 \132\060\107\061\013\060\011\006\003\125\004\006\023\002\125\123 \061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154 \040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107 \124\123\040\122\157\157\164\040\122\064\060\166\060\020\006\007 \052\206\110\316\075\002\001\006\005\053\201\004\000\042\003\142 \000\004\363\164\163\247\150\213\140\256\103\270\065\305\201\060 \173\113\111\235\373\301\141\316\346\336\106\275\153\325\141\030 \065\256\100\335\163\367\211\221\060\132\353\074\356\205\174\242  $\label{eq:control} $$ 100\166\073\251\306\270\107\330\052\347\222\221\152\163\351\261 \\ 162\071\237\051\237\242\230\323\137\136\130\206\145\017\241\204 \\ 145\006\321\334\213\311\307\163\310\214\152\057\345\304\253\321 \\ 1035\212\243\102\060\100\060\016\006\003\125\035\017\001\001\377 \\ 1004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377 \\ 1004\005\060\003\1001\377\060\0035\006\003\125\0035\016\004\026 \\ 1004\002\42\200\114\326\353\164\377\111\066\243\325\330\374\265\076 \\ 1305\152\360\224\0035\214\060\012\006\1000\350\100\377\203\336\003 \\ 1364\237\256\0035\172\247\056\271\257\117\366\203\0035\016\055\205 \\ 130\042\050\013\367\060\266\057\261\174\002\061\000\360\141\074 \\ 1247\364\240\202\343\041\325\204\035\163\206\234\055\257\312\064 \\ 1233\361\237\271\043\066\342\274\140\003\235\200\263\232\126\310 \\ 341\342\273\024\171\312\315\041\324\224\265\111\103 \\ \end{3}$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "GTS Root R4"
- # Issuer: CN=GTS Root R4,O=Google Trust Services LLC,C=US
- # Serial Number:02:03:e5:c0:68:ef:63:1a:9c:72:90:50:52
- # Subject: CN=GTS Root R4,O=Google Trust Services LLC,C=US
- # Not Valid Before: Wed Jun 22 00:00:00 2016
- # Not Valid After: Sun Jun 22 00:00:00 2036
- # Fingerprint (SHA-256):
- 34:9D:FA:40:58:C5:E2:63:12:3B:39:8A:E7:95:57:3C:4E:13:13:C8:3F:E6:8F:93:55:6C:D5:E8:03:1B:3C:7D
- # Fingerprint (SHA1): 77:D3:03:67:B5:E0:0C:15:F6:0C:38:61:DF:7C:E1:3B:92:46:4D:47

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "GTS Root R4"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\167\323\003\147\265\340\014\025\366\014\070\141\337\174\341\073 \222\106\115\107

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\107\061\013\060\011\006\003\125\004\006\023\002\125\123\061\042\060\040\006\003\125\004\012\023\031\107\157\157\147\154\145\040\124\162\166\151\143\145\163\040\114\114\103\061\024\060\022\006\003\125\004\003\023\013\107\124\123\040\122\157\157\164\040\122\064$ END$ 

```
CKA SERIAL NUMBER MULTILINE OCTAL
\002\015\002\003\345\300\150\357\143\032\234\162\220\120\122
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST STEP UP APPROVED CK BBOOL CK FALSE
# Certificate "Telia Root CA v2"
# Issuer: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI
# Serial Number:01:67:5f:27:d6:fe:7a:e3:e4:ac:be:09:5b:05:9e
# Subject: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI
# Not Valid Before: Thu Nov 29 11:55:54 2018
# Not Valid After: Sun Nov 29 11:55:54 2043
# Fingerprint (SHA-256):
24:2B:69:74:2F:CB:1E:5B:2A:BF:98:89:8B:94:57:21:87:54:4E:5B:4D:99:11:78:65:73:62:1F:6A:74:B8:2C
# Fingerprint (SHA1): B9:99:CD:D1:73:50:8A:C4:47:05:08:9C:8C:88:FB:BE:A0:2B:40:CD
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "Telia Root CA v2"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA SUBJECT MULTILINE OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\label{eq:condition} $$ \032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040 $$
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006
\003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164
\040\103\101\040\166\062
END
CKA ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006
\\ \\003\\125\\004\\003\\014\\020\\124\\145\\154\\151\\141\\040\\122\\157\\157\\164
```

\040\103\101\040\166\062

**END** 

#### CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\017\001\147\137\047\326\376\172\343\344\254\276\011\133\005 \236

**END** 

#### CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\164\060\202\003\134\240\003\002\001\002\002\017\001 \147\137\047\326\376\172\343\344\254\276\011\133\005\236\060\015 \006\011\052\206\110\206\367\015\001\001\013\005\000\060\104\061

\013\060\011\006\003\125\004\006\023\002\106\111\061\032\060\030 \006\003\125\004\012\014\021\124\145\154\151\141\040\106\151\156 \154\141\156\144\040\117\171\152\061\031\060\027\006\003\125\004 \003\014\020\124\145\154\151\141\040\122\157\157\164\040\103\101 \040\166\062\060\036\027\015\061\070\061\061\062\071\061\065 \065\065\064\132\027\015\064\063\061\061\062\071\061\065\065 \065\064\132\060\104\061\013\060\011\006\003\125\004\006\023\002 \106\111\061\032\060\030\006\003\125\004\012\014\021\124\145\154  $\label{eq:condition} $$ \frac{151}{141}040\\106\\151\\156\\154\\141\\156\\144\\040\\117\\171\\152\\061\\031$ \060\027\006\003\125\004\003\014\020\124\145\154\151\141\040\122 \157\157\164\040\103\101\040\166\062\060\202\002\0042\060\015\006 \011\052\206\110\206\367\015\001\001\001\005\000\003\202\002\017 \000\060\202\002\012\002\202\002\001\000\262\320\077\007\274\342 \173\320\153\231\370\342\167\151\347\316\235\244\003\274\202\155  $\label{eq:condition} $$ \241\376\201\145\037\114\047\254\216\000\272\026\173\353\060\152$$ \000\300\263\164\150\176\262\257\307\325\142\263\172\077\120\312 \214\066\104\044\143\322\066\351\014\205\366\103\166\325\114\241 \140\162\147\342\050\063\245\313\061\270\072\042\043\064\270\175 \275\126\042\100\235\352\364\173\003\255\150\374\262\201\117\230 \320\164\352\215\345\175\315\143\303\243\366\336\222\302\130\031 \340\226\273\305\304\251\075\245\164\226\376\257\371\211\252\275 \225\027\124\330\170\104\361\014\167\025\222\340\230\102\247\244  $\label{eq:condition} $$ 326\252\040\222\315\301\240\263\226\262\072\204\102\215\175\325$ \225\344\326\333\351\142\304\130\263\171\305\214\323\065\063\203 \237\165\241\122\047\141\070\361\131\075\216\120\340\275\171\074 \347\154\226\376\136\331\002\145\264\216\134\320\021\064\337\135 \277\122\247\201\000\303\177\231\105\231\025\325\027\310\012\123 \354\143\363\231\175\314\151\022\206\302\027\360\001\236\277\204 \274\321\122\313\033\222\146\316\244\123\345\241\277\304\333\011 \326\346\211\126\053\310\343\174\336\343\377\211\345\065\156\050 \010\121\357\267\030\154\104\312\046\341\163\306\211\006\201\345 \212\254\260\342\051\306\271\044\263\153\104\021\364\245\103\302 \114\103\345\160\066\214\266\063\127\172\225\056\202\240\364\134 \020\263\141\203\366\002\005\206\056\174\055\154\334\003\106\156 \065\223\325\172\225\057\336\040\330\133\176\224\220\004\152\272 \131\075\004\005\165\235\067\242\016\056\075\353\301\244\122\203 \376\320\153\324\146\216\334\306\351\022\116\035\052\127\252\020 \274\174\136\202\175\246\246\311\362\055\271\365\027\047\255\321  $\label{eq:condition} $$ \016\211\124\053\225\372\300\255\035\230\024\170\063\102\206\012$ \251\163\265\373\164\015\267\033\060\031\304\132\016\034\047\267 \332\030\320\377\212\310\005\272\361\252\034\242\067\267\346\110  $\label{eq:condition} $$ \244\106\054\224\352\250\166\142\107\213\020\123\007\110\127\154$$$ \342\222\115\266\256\005\313\334\301\112\136\217\254\075\031\116 \302\355\140\165\053\333\301\312\102\325\002\003\001\000\001\243 \143\060\141\060\037\006\003\125\035\043\004\030\060\026\200\024 \162\254\344\063\171\252\105\207\366\375\254\035\236\326\307\057  $\verb|\206|330|044|071|060|035|006|003|125|035|016|004|026|004|024|162|$ 

\254\344\063\171\252\105\207\366\375\254\035\236\326\307\057\206 \330\044\071\060\016\006\003\125\035\017\001\001\377\004\004\003 \002\001\006\060\017\006\003\125\035\023\001\001\377\004\005\060  $\label{eq:condition} $$ \003\001\001\377\060\015\006\011\052\206\110\206\367\015\001\001$ \013\005\000\003\202\002\001\000\240\073\131\247\011\224\076\066  $\label{eq:condition} $$ \204\322\176\057\071\245\226\227\372\021\255\374\147\363\161\011 $$$ \362\262\211\204\147\104\257\271\357\355\226\354\234\144\333\062  $\label{eq:condition} $$ \060\157\147\232\254\176\137\262\253\001\066\176\201\372\344\204$$$ \136\322\254\066\340\153\142\305\175\113\016\202\155\322\166\142 \321\376\227\370\237\060\174\030\371\264\122\167\202\035\166\333 \323\035\251\360\301\232\000\275\155\165\330\175\347\372\307\070 \243\234\160\350\106\171\003\257\056\164\333\165\370\156\123\014 \003\310\231\032\211\065\031\074\323\311\124\174\250\360\054\346  $\label{eq:condition} $$ \frac{007}{171}\frac{52}{341}\frac{346}{352}\frac{221}{202}\frac{151}{012}\frac{35}{303}\frac{176}{131} $$$ \242\236\153\106\025\230\133\323\257\106\035\142\310\316\200\122 \111\021\077\311\004\022\303\023\174\077\073\212\226\333\074\240  $\label{eq:condition} $$ \036\012\264\213\124\262\044\147\015\357\202\313\276\074\175\321 $$$ \342\177\256\026\326\126\130\271\332\040\261\203\025\241\357\212 \115\062\157\101\057\023\122\202\224\327\032\301\170\242\121\335  $\label{eq:condition} $$ \053\160\155\267\032\371\367\260\340\147\227\126\333\174\141\123$ \011\003\050\002\100\307\263\330\375\234\160\152\306\050\303\205  $\label{eq:condition} $$ \frac{351}{342}\frac{223}{240}\frac{336}{113}\frac{230}{242}\frac{04}{076}\frac{167}{005}\frac{226}{167}$$  $\label{eq:condition} $$ \075\373\264\040\017\234\162\002\172\022\057\325\243\272\121\170$ \257\052\053\104\145\116\265\375\012\350\301\315\171\207\141\053  $\label{eq:condition} $$ 36\200\127\105\277\147\361\233\221\136\245\244\354\131\110\020 $$$ \015\070\307\260\372\303\104\155\004\365\170\120\034\222\226\133 \332\365\270\056\272\133\317\345\360\152\235\113\057\130\163\055  $\label{eq:condition} $$ \frac{364}{364}.076\\364\\263\\077\\253\\025\\016\\073\\031\\101\\212\\244$ \301\127\022\146\161\114\372\123\343\127\353\142\225\011\236\124 \335\321\302\074\127\074\275\070\255\230\144\267\270\003\232\123 \126\140\135\263\330\102\033\134\113\022\212\034\353\353\175\306 \172\151\307\047\177\244\370\213\362\344\224\146\207\113\351\224 \007\011\022\171\212\262\353\164\004\334\316\364\104\131\340\026 \312\305\054\130\327\074\173\317\142\206\152\120\175\065\066\146 \247\373\067\347\050\307\330\320\255\245\151\224\217\350\301\337 \044\370\033\007\061\207\201\330\135\366\350\050\330\112\122\200 \254\023\356\120\024\036\230\307

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "Telia Root CA v2"

<sup>#</sup> Issuer: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI

<sup>#</sup> Serial Number:01:67:5f:27:d6:fe:7a:e3:e4:ac:be:09:5b:05:9e

<sup>#</sup> Subject: CN=Telia Root CA v2,O=Telia Finland Oyj,C=FI

<sup>#</sup> Not Valid Before: Thu Nov 29 11:55:54 2018 # Not Valid After : Sun Nov 29 11:55:54 2043

```
24:2B:69:74:2F:CB:1E:5B:2A:BF:98:89:8B:94:57:21:87:54:4E:5B:4D:99:11:78:65:73:62:1F:6A:74:B8:2C
# Fingerprint (SHA1): B9:99:CD:D1:73:50:8A:C4:47:05:08:9C:8C:88:FB:BE:A0:2B:40:CD
CKA_CLASS CK_OBJECT_CLASS CKO_NSS_TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "Telia Root CA v2"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\271\231\315\321\163\120\212\304\107\005\010\234\214\210\373\276
\240\053\100\315
END
CKA CERT MD5 HASH MULTILINE OCTAL
\016\217\254\252\202\337\205\261\364\334\020\034\374\231\331\110
END
CKA ISSUER MULTILINE OCTAL
\060\104\061\013\060\011\006\003\125\004\006\023\002\106\111\061
\032\060\030\006\003\125\004\012\014\021\124\145\154\151\141\040
\106\151\156\154\141\156\144\040\117\171\152\061\031\060\027\006
\label{eq:condition} $$ \003\125\004\003\014\020\124\145\154\151\141\040\122\157\157\164$
\040\103\101\040\166\062
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\017\001\147\137\047\326\376\172\343\344\254\276\011\133\005
\236
END
CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "D-TRUST BR Root CA 1 2020"
# Issuer: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE
# Serial Number:7c:c9:8f:2b:84:d7:df:ea:0f:c9:65:9a:d3:4b:4d:96
# Subject: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE
# Not Valid Before: Tue Feb 11 09:45:00 2020
# Not Valid After: Sun Feb 11 09:44:59 2035
# Fingerprint (SHA-256):
E5:9A:AA:81:60:09:C2:2B:FF:5B:25:BA:D3:7D:F3:06:F0:49:79:7C:1F:81:D8:5A:B0:89:E6:57:BD:8F:00:44
# Fingerprint (SHA1): 1F:5B:98:F0:E3:B5:F7:74:3C:ED:E6:B0:36:7D:32:CD:F4:09:41:67
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "D-TRUST BR Root CA 1 2020"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
```

# Fingerprint (SHA-256):

#### CKA SUBJECT MULTILINE OCTAL

 $\label{eq:condition} $$ \000110061\013\060\011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164\040\103\101\040\061\040\062\060\062\060$ 

**END** 

CKA ID UTF8 "0"

#### CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000110061013060011006003125\\004006023002104\\105061\\025060023\\006003\\125004\\012\\023\\014\\104\\055\\124\\162\\165\\163\\164\\04040107\\155\\142\\110\\061\\042\\060\\040\\006\\003\\125\\004\\003\\023\\031\\104\\055\\124\\122\\125\\123\\124\\040\\102\\122\\040\\122\\157\\157\\164\\040\\103\\101\\040\\061\\040\\062\\060\\062\\060\\0$ 

**END** 

## CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\174\311\217\053\204\327\337\352\017\311\145\232\323\113 \115\226

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\333\060\202\002\140\240\003\002\001\002\002\020\174 \311\217\053\204\327\337\352\017\311\145\232\323\113\115\226\060  $\label{eq:condition} $$ \012\006\010\052\206\110\316\075\004\003\003\006\110\061\013\060 $$$ \011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003 \125\004\012\023\014\104\055\124\162\165\163\164\040\107\155\142 \110\061\042\060\040\006\003\125\004\003\023\031\104\055\124\122 \125\123\124\040\102\122\040\122\157\157\164\040\103\101\040\061  $\label{eq:condition} $$ \040\062\060\062\060\036\027\015\062\060\060\062\061\061\060 $$$ \071\064\065\060\060\132\027\015\063\065\060\062\061\061\060\071 \064\064\065\071\132\060\110\061\013\060\011\006\003\125\004\006 \055\124\162\165\163\164\040\107\155\142\110\061\042\060\040\006 \003\125\004\003\023\031\104\055\124\122\125\123\124\040\102\122 \040\122\157\157\164\040\103\101\040\061\040\062\060\062\060\060 \166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201 \004\000\042\003\142\000\004\306\313\307\050\321\373\204\365\232 \357\102\024\040\341\103\153\156\165\255\374\053\003\204\324\166 \223\045\327\131\073\101\145\153\036\346\064\052\273\164\366\022  $\label{eq:condition} $$ \frac{316}{350}155\frac{347}{253}\frac{344}{074}116\frac{077}{104}\frac{010}{213}\frac{315}{026}\frac{161}{313}$ \277\222\231\364\244\327\074\120\124\122\220\205\203\170\224\147 \147\243\034\011\031\075\165\064\205\336\355\140\175\307\014\264 \101\122\271\156\345\356\102\243\202\001\015\060\202\001\011\060 \017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377 \060\035\006\003\125\035\016\004\026\004\024\163\221\020\253\377 \125\263\132\174\011\045\325\262\272\010\240\153\253\037\155\060 \016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060 \201\306\006\003\125\035\037\004\201\276\060\201\273\060\076\240 \074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056

\144\055\164\162\165\163\164\056\156\145\164\057\143\162\154\057 \144\055\164\162\165\163\164\137\142\162\137\162\157\157\164\137 \143\141\137\061\137\062\060\062\060\056\143\162\154\060\171\240  $\label{eq:condition} $$ \frac{167}{240}165\\206\\163\\154\\144\\141\\160\\072\\057\\057\\144\\151\\162\\145$  $\\ 143 \\ 164 \\ 157 \\ 162 \\ 171 \\ 056 \\ 144 \\ 055 \\ 164 \\ 162 \\ 165 \\ 163 \\ 164 \\ 056 \\ 156 \\ 145 \\$ \164\057\103\116\075\104\055\124\122\125\123\124\045\062\060\102 \122\045\062\060\122\157\157\164\045\062\060\103\101\045\062\060 \061\045\062\060\062\060\062\060\054\117\075\104\055\124\162\165 \163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143 \145\162\164\151\146\151\143\141\164\145\162\145\166\157\143\141 \372\341\143\370\141\143\350\255\205\170\124\221\234\270\223\070  $\label{eq:condition} $$ \076\032\101\332\100\026\123\102\010\312\057\216\361\076\201\126$ \300\252\330\355\030\304\260\256\364\076\372\046\002\061\000\363 \050\342\306\333\053\231\373\267\121\270\044\243\244\224\172\032  $\label{eq:condition} $$ \077\346\066\342\003\127\063\212\060\313\202\307\326\024\021\325 $$$ \165\143\133\024\225\234\037\001\317\330\325\162\247\017\073 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "D-TRUST BR Root CA 1 2020"
- # Issuer: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE
- # Serial Number:7c:c9:8f:2b:84:d7:df:ea:0f:c9:65:9a:d3:4b:4d:96
- # Subject: CN=D-TRUST BR Root CA 1 2020,O=D-Trust GmbH,C=DE
- # Not Valid Before: Tue Feb 11 09:45:00 2020
- # Not Valid After: Sun Feb 11 09:44:59 2035
- # Fingerprint (SHA-256):

E5:9A:AA:81:60:09:C2:2B:FF:5B:25:BA:D3:7D:F3:06:F0:49:79:7C:1F:81:D8:5A:B0:89:E6:57:BD:8F:00:44

# Fingerprint (SHA1): 1F:5B:98:F0:E3:B5:F7:74:3C:ED:E6:B0:36:7D:32:CD:F4:09:41:67

CKA CLASS CK OBJECT CLASS CKO NSS TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "D-TRUST BR Root CA 1 2020"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\037\133\230\360\343\265\367\164\074\355\346\260\066\175\062\315 \364\011\101\147

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \265\252\113\325\355\367\343\125\056\217\162\012\363\165\270\355$ 

**END** 

CKA ISSUER MULTILINE OCTAL

\060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061 \025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163 \164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023

```
\031\104\055\124\122\125\123\124\040\102\122\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA SERIAL NUMBER MULTILINE OCTAL
\label{eq:condition} $$ \002\020\174\311\217\053\204\327\337\352\017\311\145\232\323\113
\115\226
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA_TRUST_EMAIL_PROTECTION CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "D-TRUST EV Root CA 1 2020"
# Issuer: CN=D-TRUST EV Root CA 1 2020.O=D-Trust GmbH.C=DE
# Serial Number:5f:02:41:d7:7a:87:7c:4c:03:a3:ac:96:8d:fb:ff:d0
# Subject: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE
# Not Valid Before: Tue Feb 11 10:00:00 2020
# Not Valid After: Sun Feb 11 09:59:59 2035
# Fingerprint (SHA-256):
08:17:0D:1A:A3:64:53:90:1A:2F:95:92:45:E3:47:DB:0C:8D:37:AB:AA:BC:56:B8:1A:A1:00:DC:95:89:70:DB
# Fingerprint (SHA1): 61:DB:8C:21:59:69:03:90:D8:7C:9C:12:86:54:CF:9D:3D:F4:DD:07
CKA CLASS CK OBJECT CLASS CKO CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "D-TRUST EV Root CA 1 2020"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA SUBJECT MULTILINE OCTAL
\label{eq:condition} $$ \060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061 $$
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164
\label{eq:condition} $$ \040\103\101\040\061\040\062\060\062\060$
END
CKA ID UTF8 "0"
CKA_ISSUER MULTILINE_OCTAL
\label{eq:condition} $$ \060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061 $$
\025\060\023\006\003\125\004\012\023\014\104\055\124\162\165\163
\164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023
\031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164
\040\103\101\040\061\040\062\060\062\060
END
CKA_SERIAL_NUMBER MULTILINE_OCTAL
\002\020\137\002\101\327\172\207\174\114\003\243\254\226\215\373
\377\320
END
```

#### CKA VALUE MULTILINE OCTAL

\060\202\002\333\060\202\002\140\240\003\002\001\002\002\020\137 \002\101\327\172\207\174\114\003\243\254\226\215\373\377\320\060 \012\006\010\052\206\110\316\075\004\003\003\060\110\061\013\060 \011\006\003\125\004\006\023\002\104\105\061\025\060\023\006\003 \125\004\012\023\014\104\055\124\162\165\163\164\040\107\155\142 \110\061\042\060\040\006\003\125\004\003\023\031\104\055\124\122 \125\123\124\040\105\126\040\122\157\157\164\040\103\101\040\061 \040\062\060\062\060\060\036\027\015\062\060\060\062\061\061\061 \060\060\060\060\060\132\027\015\063\065\060\062\061\061\060\071 \065\071\065\071\132\060\110\061\013\060\011\006\003\125\004\006 \055\124\162\165\163\164\040\107\155\142\110\061\042\060\040\006 \003\125\004\003\023\031\104\055\124\122\125\123\124\040\105\126 \040\122\157\157\164\040\103\101\040\061\040\062\060\062\060\060 \166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201  $\label{eq:condition} $$ \004\000\042\003\142\000\004\361\013\335\206\103\040\031\337\227 $$$ \205\350\042\112\233\317\235\230\277\264\005\046\311\313\343\246 \322\217\305\236\170\173\061\211\251\211\255\047\074\145\020\202 \374\337\303\235\116\360\063\043\304\322\062\365\034\260\337\063 \027\135\305\360\261\212\371\357\271\267\024\312\051\112\302\017 \251\177\165\145\111\052\060\147\364\144\367\326\032\167\332\303  $\label{eq:condition} $$ 302\227\141\102\173\111\255\243\202\001\015\060\202\001\011\060$$ \017\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377 \060\035\006\003\125\035\016\004\026\004\024\177\020\001\026\067 \072\244\050\344\120\370\244\367\354\153\062\266\376\351\213\060 \016\006\003\125\035\017\001\001\377\004\004\003\002\001\006\060 \201\306\006\003\125\035\037\004\201\276\060\201\273\060\076\240 \074\240\072\206\070\150\164\164\160\072\057\057\143\162\154\056 \144\055\164\162\165\163\164\056\156\145\164\057\143\162\154\057 \144\055\164\162\165\163\164\137\145\166\137\162\157\157\164\137 \143\141\137\061\137\062\060\062\060\056\143\162\154\060\171\240 \167\240\165\206\163\154\144\141\160\072\057\057\144\151\162\145 \143\164\157\162\171\056\144\055\164\162\165\163\164\056\156\145 \164\057\103\116\075\104\055\124\122\125\123\124\045\062\060\105 \126\045\062\060\122\157\157\164\045\062\060\103\101\045\062\060 \061\045\062\060\062\060\062\060\054\117\075\104\055\124\162\165 \163\164\045\062\060\107\155\142\110\054\103\075\104\105\077\143 \075\004\003\003\003\151\000\060\146\002\061\000\312\074\306\052 \165\302\136\165\142\071\066\000\140\132\213\301\223\231\314\331 \333\101\073\073\207\231\027\073\325\314\117\312\042\367\240\200 \313\371\264\261\033\126\365\162\322\374\031\321\002\061\000\221 \367\060\223\077\020\106\053\161\244\320\073\104\233\300\051\002 \005\262\101\167\121\363\171\132\236\216\024\240\116\102\322\133 \201\363\064\152\003\347\042\070\120\133\355\031\117\103\026 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE # Trust for "D-TRUST EV Root CA 1 2020" # Issuer: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE # Serial Number:5f:02:41:d7:7a:87:7c:4c:03:a3:ac:96:8d:fb:ff:d0 # Subject: CN=D-TRUST EV Root CA 1 2020,O=D-Trust GmbH,C=DE # Not Valid Before: Tue Feb 11 10:00:00 2020 # Not Valid After: Sun Feb 11 09:59:59 2035 # Fingerprint (SHA-256): 08:17:0D:1A:A3:64:53:90:1A:2F:95:92:45:E3:47:DB:0C:8D:37:AB:AA:BC:56:B8:1A:A1:00:DC:95:89:70:DB # Fingerprint (SHA1): 61:DB:8C:21:59:69:03:90:D8:7C:9C:12:86:54:CF:9D:3D:F4:DD:07 CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST CKA\_TOKEN CK\_BBOOL CK\_TRUE CKA PRIVATE CK BBOOL CK FALSE CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE CKA LABEL UTF8 "D-TRUST EV Root CA 1 2020" CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL \141\333\214\041\131\151\003\220\330\174\234\022\206\124\317\235 \075\364\335\007 **END** CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL \214\055\235\160\237\110\231\021\006\021\373\351\313\060\300\156 **END** CKA ISSUER MULTILINE OCTAL \060\110\061\013\060\011\006\003\125\004\006\023\002\104\105\061 \164\040\107\155\142\110\061\042\060\040\006\003\125\004\003\023 \031\104\055\124\122\125\123\124\040\105\126\040\122\157\157\164 \040\103\101\040\061\040\062\060\062\060 **END** CKA SERIAL NUMBER MULTILINE OCTAL \002\020\137\002\101\327\172\207\174\114\003\243\254\226\215\373 \377\320 **END** CKA TRUST SERVER AUTH CK TRUST CKT NSS TRUSTED DELEGATOR CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE # Certificate "DigiCert TLS ECC P384 Root G5"

```
# Certificate *DigiCert TLS ECC P384 Root G5*

# # Issuer: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US

# Serial Number:09:e0:93:65:ac:f7:d9:c8:b9:3e:1c:0b:04:2a:2e:f3

# Subject: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US

# Not Valid Before: Fri Jan 15 00:00:00 2021
```

# Not Valid After: Sun Jan 14 23:59:59 2046

# Fingerprint (SHA-256):

# Fingerprint (SHA1): 17:F3:DE:5E:9F:0F:19:E9:8E:F6:1F:32:26:6E:20:C4:07:AE:30:EE

CKA CLASS CK OBJECT CLASS CKO CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "DigiCert TLS ECC P384 Root G5"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000116\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164\040\06\003\125\004\003\023\035\104\151\147\151\103\145\162\164\040\124\114\123\040\105\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065\ END$ 

CKA ID UTF8 "0"

#### CKA ISSUER MULTILINE OCTAL

 $\label{eq:condition} $$ \000116\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164\040\06\003\125\004\003\023\035\104\151\147\151\103\145\162\164\040\124\114\123\040\105\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065\ END$ 

## CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\011\340\223\145\254\367\331\310\271\076\034\013\004\052 \056\363

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\202\003\002\001\002\002\001\002\002\001\1$ \340\223\145\254\367\331\310\271\076\034\013\004\052\056\363\060 \012\006\010\052\206\110\316\075\004\003\003\060\116\061\013\060 \011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003 \125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111 \156\143\056\061\046\060\044\006\003\125\004\003\023\035\104\151 \147\151\103\145\162\164\040\124\114\123\040\105\103\103\040\120  $\label{eq:condition} $$ \063\070\064\040\122\157\157\164\040\107\065\060\036\027\015\062$$$ \011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003 \125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111 \156\143\056\061\046\060\044\006\003\125\004\003\023\035\104\151 \147\151\103\145\162\164\040\124\114\123\040\105\103\103\040\120 \063\070\064\040\122\157\157\164\040\107\065\060\166\060\020\006 \007\052\206\110\316\075\002\001\006\005\053\201\004\000\042\003 \142\000\004\301\104\241\317\021\227\120\232\336\043\202\065\007 \315\320\313\030\235\322\361\177\167\065\117\073\335\224\162\122

\355\302\073\370\354\372\173\153\130\040\354\231\256\311\374\150 \263\165\271\333\011\354\310\023\365\116\306\012\035\146\060\114 \273\037\107\012\074\141\020\102\051\174\245\010\016\340\042\351 \323\065\150\316\233\143\237\204\265\231\115\130\240\216\365\124 \347\225\311\243\102\060\100\060\035\006\003\125\035\016\004\026  $\label{eq:condition} $$ \004\024\301\121\105\120\131\253\076\347\054\132\372\040\042\022$ \007\200\210\174\021\152\060\016\006\003\125\035\017\001\001\377  $\label{eq:condition} $$ \004\004\003\002\001\206\060\017\006\003\125\035\023\001\001\377 $$$  $\label{eq:condition} $$ \004\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075$$$ \004\003\003\003\150\000\060\145\002\061\000\211\152\215\107\347 \354\374\156\125\003\331\147\154\046\116\203\306\375\311\373\053  $\label{eq:condition} $$ \023\274\267\172\214\264\145\322\151\151\143\023\143\073\046\120 $$$ \056\001\241\171\006\221\235\110\277\302\276\002\060\107\303\025 \173\261\240\221\231\111\223\250\074\174\350\106\006\213\054\362  $\label{eq:condition} $$ \001\000\224\235\142\310\211\275\031\204\024\351\245\373\001\270$ \015\166\103\214\056\123\313\174\337\014\027\226\120 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "DigiCert TLS ECC P384 Root G5"
- # Issuer: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US
- # Serial Number:09:e0:93:65:ac:f7:d9:c8:b9:3e:1c:0b:04:2a:2e:f3
- # Subject: CN=DigiCert TLS ECC P384 Root G5,O="DigiCert, Inc.",C=US
- # Not Valid Before: Fri Jan 15 00:00:00 2021
- # Not Valid After: Sun Jan 14 23:59:59 2046
- # Fingerprint (SHA-256):
- 01:8E:13:F0:77:25:32:CF:80:9B:D1:B1:72:81:86:72:83:FC:48:C6:E1:3B:E9:C6:98:12:85:4A:49:0C:1B:05
- # Fingerprint (SHA1): 17:F3:DE:5E:9F:0F:19:E9:8E:F6:1F:32:26:6E:20:C4:07:AE:30:EE
- CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST
- CKA\_TOKEN CK\_BBOOL CK\_TRUE
- CKA\_PRIVATE CK\_BBOOL CK\_FALSE
- CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE
- CKA\_LABEL UTF8 "DigiCert TLS ECC P384 Root G5"
- CKA CERT SHA1 HASH MULTILINE OCTAL
- $\label{eq:condition} $$ \027\363\336\136\237\017\031\351\216\366\037\062\046\156\040\304\007\256\060\356$
- **END**
- CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL
- \323\161\004\152\103\034\333\246\131\341\250\243\252\305\161\355 END
- CKA\_ISSUER MULTILINE\_OCTAL

```
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\011\340\223\145\254\367\331\310\271\076\034\013\004\052
\056\363
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "DigiCert TLS RSA4096 Root G5"
# Issuer: CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US
# Serial Number:08:f9:b4:78:a8:fa:7e:da:6a:33:37:89:de:7c:cf:8a
# Subject: CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After: Sun Jan 14 23:59:59 2046
# Fingerprint (SHA-256):
37:1A:00:DC:05:33:B3:72:1A:7E:EB:40:E8:41:9E:70:79:9D:2B:0A:0F:2C:1D:80:69:31:65:F7:CE:C4:AD:75
# Fingerprint (SHA1): A7:88:49:DC:5D:7C:75:8C:8C:DE:39:98:56:B3:AA:D0:B2:A5:71:35
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA LABEL UTF8 "DigiCert TLS RSA4096 Root G5"
CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509
CKA_SUBJECT MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\124\114\123\040
\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065
END
CKA ID UTF8 "0"
CKA ISSUER MULTILINE OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\124\114\123\040
```

\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065 **END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\010\371\264\170\250\372\176\332\152\063\067\211\336\174 \317\212

**END** 

CKA\_VALUE MULTILINE\_OCTAL

\060\202\005\146\060\202\003\116\240\003\002\001\002\002\002\010

\371\264\170\250\372\176\332\152\063\067\211\336\174\317\212\060 \015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\115 \061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060 \025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164 \054\040\111\156\143\056\061\045\060\043\006\003\125\004\003\023 \101\064\060\071\066\040\122\157\157\164\040\107\065\060\036\027 \015\062\061\060\061\061\065\060\060\060\060\060\060\060\132\027\015 \064\066\060\061\061\064\062\063\065\071\065\071\132\060\115\061 \013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025 \006\003\125\004\012\023\016\104\151\147\151\103\145\162\164\054 \040\111\156\143\056\061\045\060\043\006\003\125\004\003\023\034 \104\151\147\151\103\145\162\164\040\124\114\123\040\122\123\101  $\label{eq:condition} $$ \064\060\071\066\040\122\157\157\164\040\107\065\060\202\002\042 $$$  $\label{eq:condition} $$ \006\011\052\206\110\206\367\015\001\001\001\005\000\003$ \202\002\017\000\060\202\002\012\002\202\002\001\000\263\320\364 \311\171\021\235\375\374\146\201\347\314\325\344\274\354\201\076 \152\065\216\056\267\347\336\257\371\007\115\317\060\235\352\011 \013\231\275\154\127\332\030\112\270\170\254\072\071\250\246\110 \254\056\162\345\275\353\361\032\315\347\244\003\251\077\021\264 \330\057\211\026\373\224\001\075\273\057\370\023\005\241\170\034 \216\050\340\105\340\203\364\131\033\225\263\256\176\003\105\345 \276\302\102\376\356\362\074\266\205\023\230\062\235\026\250\051 \302\013\034\070\334\237\061\167\134\277\047\243\374\047\254\267 \053\275\164\233\027\055\362\201\332\135\260\341\043\027\076\210 \112\022\043\320\352\317\235\336\003\027\261\102\112\240\026\114 \244\155\223\351\077\072\356\072\174\235\130\235\364\116\217\374 \073\043\310\155\270\342\005\332\314\353\354\303\061\364\327\247 \051\124\200\317\104\133\114\157\060\236\363\314\335\037\224\103 \235\115\177\160\160\015\324\072\321\067\360\154\235\233\300\024  $\verb| 223| 130| 357| 315| 101| 070| 165| 274| 023| 003| 225| 174| 177| 343| 134| 351|$ \325\015\325\342\174\020\142\252\153\360\075\166\363\077\243\350 \260\301\375\357\252\127\115\254\206\247\030\264\051\301\054\016 \277\144\276\051\214\330\002\055\315\134\057\362\177\357\025\364 \014\025\254\012\260\361\323\015\117\152\115\167\227\001\240\361 \146\267\267\316\357\316\354\354\245\165\312\254\343\341\143\367 \270\241\004\310\274\173\077\135\055\026\042\126\355\110\111\376 \247\057\171\060\045\233\272\153\055\077\235\073\304\027\347\035  $\label{eq:condition} $$ \056\373\362\317\246\374\343\024\054\226\230\041\214\264\221\351 $$$  $\label{eq:condition} $$ \031\140\203\362\060\053\006\163\120\325\230\073\006\351\307\212$ \014\140\214\050\370\122\233\156\341\366\115\273\006\044\233\327 \053\046\077\375\052\057\161\365\326\044\276\177\061\236\017\155 \350\217\117\115\243\077\377\065\352\337\111\136\101\217\206\371 \361\167\171\113\033\264\243\136\057\373\106\002\320\146\023\136 \136\205\117\316\330\160\210\173\316\001\265\226\227\327\315\175 \375\202\370\302\044\301\312\001\071\117\215\242\301\024\100\037 \234\146\325\014\011\106\326\362\320\321\110\166\126\072\103\313 \266\012\021\071\272\214\023\154\006\265\236\317\353\002\003\001

\000\001\243\102\060\100\060\035\006\003\125\035\016\004\026\004 \024\121\063\034\355\066\100\257\027\323\045\315\151\150\362\257 \116\043\076\263\101\060\016\006\003\125\035\017\001\001\377\004  $\label{eq:condition} $$ \004\003\002\001\206\060\017\006\003\125\035\023\001\001\377\004$ \005\060\003\001\001\377\060\015\006\011\052\206\110\206\367\015  $\label{eq:condition} $$ \001\01\014\005\000\003\202\002\001\000\140\246\257\133\137\127 $$$ \332\211\333\113\120\251\304\043\065\041\377\320\141\060\204\221  $\label{eq:condition} $$ \267\077\020\317\045\216\311\277\106\064\331\301\041\046\034\160$$$  $\label{eq:condition} $$ \031\162\036\243\311\207\376\251\103\144\226\072\310\123\004\012 $$$ \266\101\273\304\107\000\331\237\030\030\073\262\016\363\064\352 \044\367\335\257\040\140\256\222\050\137\066\347\135\344\336\307  $\label{eq:condition} $$ \074\333\120\071\255\273\075\050\115\226\174\166\306\133\364\301 $$$ \333\024\245\253\031\142\007\030\100\137\227\221\334\234\307\253 \265\121\015\346\151\123\125\314\071\175\332\305\021\125\162\305  $\label{eq:condition} $$ \073\213\211\370\064\055\244\027\345\027\346\231\175\060\210\041 $$$ \067\315\060\027\075\270\362\274\250\165\240\103\334\076\211\113  $\label{eq:condition} $$ \220\256\155\003\340\034\243\240\226\011\273\175\243\267\052\020 $$$ \104\113\106\007\064\143\355\061\271\004\356\243\233\232\256\346 \061\170\364\352\044\141\073\253\130\144\377\273\207\047\142\045 \201\337\334\241\057\366\355\247\377\172\217\121\056\060\370\244 \001\322\205\071\137\001\231\226\157\132\133\160\031\106\376\206 \140\076\255\200\020\011\335\071\045\057\130\177\273\322\164\360  $\label{eq:condition} $$ 367\106\037\106\071\112\330\123\320\363\056\073\161\245\324\157$$$ \374\363\147\344\007\217\335\046\031\341\215\133\372\243\223\021 \233\351\310\072\303\125\150\232\222\341\122\166\070\350\341\272 \275\373\117\325\357\263\347\110\203\061\360\202\041\343\266\276 \247\253\157\357\237\337\114\317\001\270\142\152\043\075\347\011 \115\200\033\173\060\244\303\335\007\177\064\276\244\046\262\366 \101\350\011\035\343\040\230\252\067\117\377\367\361\342\051\160 \061\107\077\164\320\024\026\372\041\212\002\325\212\011\224\167  $\label{eq:condition} $$ \056\362\131\050\213\174\120\222\012\146\170\070\203\165\304\265$ \132\250\021\306\345\301\235\146\125\317\123\304\257\327\165\205 \251\102\023\126\354\041\167\201\223\132\014\352\226\331\111\312 \241\010\362\227\073\155\233\004\030\044\104\216\174\001\362\334 \045\330\136\206\232\261\071\333\365\221\062\152\321\246\160\212 \242\367\336\244\105\205\046\250\036\214\135\051\133\310\113\330 \232\152\003\136\160\362\205\117\154\113\150\057\312\124\366\214 \332\062\376\303\153\203\077\070\306\176

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

<sup>#</sup> Trust for "DigiCert TLS RSA4096 Root G5"

<sup>#</sup> Issuer: CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US

<sup>#</sup> Serial Number:08:f9:b4:78:a8:fa:7e:da:6a:33:37:89:de:7c:cf:8a

<sup>#</sup> Subject: CN=DigiCert TLS RSA4096 Root G5,O="DigiCert, Inc.",C=US

<sup>#</sup> Not Valid Before: Fri Jan 15 00:00:00 2021

```
# Fingerprint (SHA-256):
37:1A:00:DC:05:33:B3:72:1A:7E:EB:40:E8:41:9E:70:79:9D:2B:0A:0F:2C:1D:80:69:31:65:F7:CE:C4:AD:75
# Fingerprint (SHA1): A7:88:49:DC:5D:7C:75:8C:8C:DE:39:98:56:B3:AA:D0:B2:A5:71:35
CKA CLASS CK OBJECT CLASS CKO NSS TRUST
CKA_TOKEN CK_BBOOL CK_TRUE
CKA PRIVATE CK BBOOL CK FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA_LABEL UTF8 "DigiCert TLS RSA4096 Root G5"
CKA CERT SHA1 HASH MULTILINE OCTAL
\247\210\111\334\135\174\165\214\214\336\071\230\126\263\252\320
\262\245\161\065
END
CKA_CERT_MD5_HASH MULTILINE_OCTAL
\254\376\367\064\226\251\362\263\264\022\113\344\047\101\157\341
END
CKA_ISSUER MULTILINE_OCTAL
\060\115\061\013\060\011\006\003\125\004\006\023\002\125\123\061
\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145
\162\164\054\040\111\156\143\056\061\045\060\043\006\003\125\004
\003\023\034\104\151\147\151\103\145\162\164\040\124\114\123\040
\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\010\371\264\170\250\372\176\332\152\063\067\211\336\174
\317\212
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "DigiCert SMIME ECC P384 Root G5"
# Issuer: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US
# Serial Number:05:3f:6e:a0:06:01:72:7d:ed:3f:c3:a3:b6:a3:d6:ef
# Subject: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US
# Not Valid Before: Fri Jan 15 00:00:00 2021
# Not Valid After: Sun Jan 14 23:59:59 2046
# Fingerprint (SHA-256):
E8:E8:17:65:36:A6:0C:C2:C4:E1:01:87:C3:BE:FC:A2:0E:F2:63:49:70:18:F5:66:D5:BE:A0:F9:4D:0C:11:1B
# Fingerprint (SHA1): 1C:B8:A7:08:C9:0D:20:79:01:A0:B2:36:7F:F0:95:65:E4:53:24:FE
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert SMIME ECC P384 Root G5"
```

# Not Valid After: Sun Jan 14 23:59:59 2046

# CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509 CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \0011006\003\125\004\006\023\002\125\123\061 $$ \027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145 $$ \162\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004 $$ \003\023\037\104\151\147\151\103\145\162\164\040\123\115\111\115 $$ \105\040\105\103\103\040\120\063\070\064\040\122\157\157\164\040 $$ \107\065$$ 

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \0011006\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111\156\143\056\061\050\060\046\006\003\125\004\003\023\037\104\151\147\151\103\145\162\164\040\123\115\111\115\105\040\105\103\103\040\120\063\070\064\040\122\157\157\164\040\107\065$ 

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

 $\label{eq:condition} $$ \002\020\005\077\156\240\006\001\162\175\355\077\303\243\266\243\326\357$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

\060\202\002\034\060\202\001\243\240\003\002\001\002\002\005 \077\156\240\006\001\162\175\355\077\303\243\266\243\326\357\060 \012\006\010\052\206\110\316\075\004\003\003\060\120\061\013\060 \011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003 \125\004\012\023\016\104\151\147\151\103\145\162\164\054\040\111 \156\143\056\061\050\060\046\006\003\125\004\003\023\037\104\151 \147\151\103\145\162\164\040\123\115\111\115\105\040\105\103\103  $\label{eq:condition} $$ \040\120\063\070\064\040\122\157\157\164\040\107\065\060\036\027 $$$ \015\062\061\060\061\061\065\060\060\060\060\060\060\060\132\027\015 \064\066\060\061\061\064\062\063\065\071\065\071\132\060\120\061 \013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025 \006\003\125\004\012\023\016\104\151\147\151\103\145\162\164\054 \040\111\156\143\056\061\050\060\046\006\003\125\004\003\023\037 \104\151\147\151\103\145\162\164\040\123\115\111\115\105\040\105 \103\103\040\120\063\070\064\040\122\157\157\164\040\107\065\060  $\label{eq:condition} $$ 166\060\020\006\007\052\206\110\316\075\002\001\006\005\053\201 $$$ \153\032\324\241\252\322\167\225\076\210\345\007\237\266\160\146 \040\050\244\210\354\160\065\257\263\062\377\067\023\112\236\274 \001\003\336\204\301\270\306\346\145\107\211\362\023\125\277\315 \245\036\010\140\177\255\177\350\141\222\051\317\011\107\136\013 \034\300\037\244\277\362\133\274\230\357\231\114\314\160\153\266 \272\320\050\035\277\276\004\243\102\060\100\060\035\006\003\125 \035\016\004\026\004\024\163\172\153\226\333\102\007\213\122\146 \302\144\062\027\376\340\147\220\056\255\060\016\006\003\125\035

 $\label{eq:control} $$ \017\001\001\377\004\004\003\002\001\206\000\17\006\003\125\035\023\001\001\377\004\005\060\003\001\001\377\060\012\006\010\052\206\110\316\075\004\003\003\147\000\060\144\002\060\067\104\365\062\200\343\161\353\364\155\317\174\314\221\232\303\156\161\330\322\043\135\222\115\202\102\155\134\141\225\366\221\365\247\010\366\152\227\351\234\224\055\230\160\375\063\266\011\002\060\007\074\057\271\130\202\136\017\243\142\250\223\147\360\040\303\151\277\003\054\073\120\247\073\257\101\070\311\122\110\221\326\016\373\274\140\060\174\144\077\022\036\105\177\121\076\364\246\END$ 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "DigiCert SMIME ECC P384 Root G5"
- # Issuer: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US
- # Serial Number:05:3f:6e:a0:06:01:72:7d:ed:3f:c3:a3:b6:a3:d6:ef
- # Subject: CN=DigiCert SMIME ECC P384 Root G5,O="DigiCert, Inc.",C=US
- # Not Valid Before: Fri Jan 15 00:00:00 2021
- # Not Valid After: Sun Jan 14 23:59:59 2046
- # Fingerprint (SHA-256):

E8:E8:17:65:36:A6:0C:C2:C4:E1:01:87:C3:BE:FC:A2:0E:F2:63:49:70:18:F5:66:D5:BE:A0:F9:4D:0C:11:1B

# Fingerprint (SHA1): 1C:B8:A7:08:C9:0D:20:79:01:A0:B2:36:7F:F0:95:65:E4:53:24:FE

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "DigiCert SMIME ECC P384 Root G5"

CKA CERT SHA1 HASH MULTILINE OCTAL

 $\label{eq:condition} $$ \034\270\247\010\311\015\040\171\001\240\262\066\177\360\225\145$$ 

\344\123\044\376

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

\246\376\364\122\066\104\330\356\015\267\003\013\357\164\263\003

**END** 

CKA ISSUER MULTILINE OCTAL

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\020\005\077\156\240\006\001\162\175\355\077\303\243\266\243

\326\357

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "DigiCert SMIME RSA4096 Root G5"

#

- # Issuer: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US
- # Serial Number:05:f6:ba:04:23:83:46:cb:7d:5c:e6:b9:5b:ba:1c:55
- # Subject: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US
- # Not Valid Before: Fri Jan 15 00:00:00 2021
- # Not Valid After: Sun Jan 14 23:59:59 2046
- # Fingerprint (SHA-256):

90:37:0D:3E:FA:88:BF:58:C3:01:05:BA:25:10:4A:35:84:60:A7:FA:52:DF:C2:01:1D:F2:33:A0:F4:17:91:2A

# Fingerprint (SHA1): 5B:C5:AD:E2:9A:A7:54:DA:84:89:53:A5:FE:D7:5B:46:86:D0:57:08

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "DigiCert SMIME RSA4096 Root G5"

CKA CERTIFICATE TYPE CK CERTIFICATE TYPE CKC X 509

CKA\_SUBJECT MULTILINE\_OCTAL

 $\label{eq:condition} $$ \060\117\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$$ 

\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145

\162\164\054\040\111\156\143\056\061\047\060\045\006\003\125\004

\003\023\036\104\151\147\151\103\145\162\164\040\123\115\111\115

\105\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107

\065

**END** 

CKA\_ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000117\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164\040\123\115\111\115\105\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065$ 

**END** 

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\020\005\366\272\004\043\203\106\313\175\134\346\271\133\272\034\125$ 

**END** 

#### CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:constraint} $$ \000\200\1002\001\002\0002\0005 \\ \366\272\004\043\203\106\313\175\134\346\271\133\272\034\125\060 \\ \015\006\011\052\206\110\206\367\015\001\001\014\005\000\060\117 \\ \061\013\060\011\006\003\125\004\006\023\002\125\123\061\027\060 \\ \025\006\003\125\004\012\023\016\104\151\147\151\103\145\162\164 \\ \end{tabular}$ 

\054\040\111\156\143\056\061\047\060\045\006\003\125\004\003\023 \036\104\151\147\151\103\145\162\164\040\123\115\111\115\105\040 \122\123\101\064\060\071\066\040\122\157\157\164\040\107\065\060 \036\027\015\062\061\060\061\061\065\060\060\060\060\060\060\060\132 \027\015\064\066\060\061\061\064\062\063\065\071\065\071\132\060 \117\061\013\060\011\006\003\125\004\006\023\002\125\123\061\027 \060\025\006\003\125\004\012\023\016\104\151\147\151\103\145\162 \164\054\040\111\156\143\056\061\047\060\045\006\003\125\004\003  $\label{eq:condition} $$ \023\036\104\151\147\151\103\145\162\164\040\123\115\111\115\105$$ \040\122\123\101\064\060\071\066\040\122\157\157\164\040\107\065 \060\202\002\042\060\015\006\011\052\206\110\206\367\015\001\001  $\label{eq:condition} $$ \001\005\000\003\202\002\017\000\060\202\002\012\002\202\002\01$ \000\340\152\133\331\370\371\175\354\265\173\357\137\335\134\064 \330\332\135\321\313\145\165\253\041\174\133\000\324\202\157\105 \205\101\212\251\022\002\162\062\360\024\365\003\165\273\143\227 \111\017\100\231\013\032\036\126\247\322\320\341\253\335\345\004  $\label{eq:condition} $$ \033\343\037\024\022\002\210\365\240\200\011\366\047\232\120\360 $$$ \272\343\242\340\254\152\024\221\265\153\070\020\172\242\061\341 \221\033\267\271\360\053\133\310\167\011\166\267\121\304\066\012 \231\123\124\104\045\267\011\065\206\027\005\126\223\075\101\267 \002\327\142\037\212\222\021\207\352\021\155\352\010\021\334\261 \170\110\111\222\366\264\121\200\170\043\330\376\341\126\032\072  $\label{eq:condition} $$ \220\023\126\064\211\325\342\225\213\137\336\262\314\373\077\070 $$$ \267\205\367\352\236\277\056\241\056\057\115\175\152\021\056\066 \240\377\021\010\004\225\125\340\033\073\147\223\251\224\125\352 \062\355\006\072\177\302\177\343\255\023\047\321\064\101\263\060 \303\277\264\210\370\003\202\244\337\076\253\170\167\240\131\223  $\label{eq:condition} $$ 161\347\335\353\000\004\173\314\110\071\050\340\036\243\025\151$ \310\066\262\241\013\227\337\125\326\357\221\234\244\366\026\367 \121\012\356\003\043\221\334\004\377\340\335\070\366\042\003\000  $\label{eq:condition} $$ 302\07\161\032\022\311\327\106\052\224\033\315\326\273\033\356$ \277\276\115\120\130\260\013\315\060\166\051\365\317\345\266\152 \057\166\260\260\151\152\320\155\145\030\065\176\223\274\162\027 \301\125\102\315\057\302\045\273\364\375\035\241\144\042\124\135 \342\236\162\101\204\156\161\226\352\105\007\266\136\172\112\206 \235\163\144\167\070\003\322\017\123\245\125\040\304\115\377\150 \157\125\251\352\335\161\344\117\331\205\243\174\116\051\002\236 \013\011\362\032\123\314\000\246\335\321\064\366\015\301\060\261 \234\002\144\254\065\355\245\260\051\261\322\225\063\017\322\040 \063\275\354\043\113\362\031\371\332\230\144\344\054\061\037\056 \341\215\034\004\225\050\115\214\130\315\113\345\163\202\206\214 \354\250\326\171\134\373\144\273\334\014\114\050\366\027\257\342 \150\326\026\206\230\333\374\001\334\061\272\370\234\016\371\050 \106\112\341\375\226\006\105\171\021\150\027\145\134\213\046\207 \133\002\003\001\000\001\243\102\060\100\060\035\006\003\125\035 \016\004\026\004\024\321\243\324\127\035\117\125\333\165\114\134 \102\236\143\026\316\264\306\073\037\060\016\006\003\125\035\017 \001\001\377\004\004\003\002\001\206\060\017\006\003\125\035\023

\001\001\377\004\005\060\003\001\001\377\060\015\006\011\052\206 \110\206\367\015\001\001\014\005\000\003\202\002\001\000\007\247 \012\336\123\273\232\353\160\277\262\066\220\315\344\247\270\361  $\\ \\014\\344\\135\\132\\035\\170\\145\\374\\311\\270\\036\\043\\021\\127\\174\\151$  $\label{eq:condition} $$ \065\155\001\377\123\120\277\007\016\272\307\001\077\130\052\224 $$$ \165\003\253\034\013\043\334\033\212\036\067\075\035\130\217\163 \331\263\052\157\337\020\240\133\014\247\312\260\177\271\044\242  $\label{eq:condition} $$ \001\065\062\345\136\106\101\353\330\177\163\347\102\351\244\121 $$$  $\\ \\ 046\\ \\ 167\\ \\ 201\\ \\ 012\\ \\ 250\\ \\ 353\\ \\ 017\\ \\ 012\\ \\ 120\\ \\ 235\\ \\ 176\\ \\ 212\\ \\ 040\\ \\ 147\\ \\ 374\\ \\ 013$ \216\072\021\323\305\214\140\030\331\113\261\374\324\361\264\111  $\label{eq:condition} $$ \frac{321}{373}\frac{363}{006}\frac{317}{227}\frac{363}{014}\frac{351}{363} $$$ \236\165\201\134\123\015\042\374\066\346\111\156\164\333\000\205 \215\174\042\240\216\373\020\114\324\142\023\133\357\113\162\046 \213\374\116\212\217\376\227\020\123\305\170\213\102\144\033\137  $\label{eq:condition} $$ 340\211\375\273\011\177\120\340\124\205\046\021\152\035\145\371 $$$ \111\051\334\174\066\337\373\075\367\322\254\356\062\215\156\246 \175\071\234\105\304\312\015\365\073\264\171\123\245\057\126\307 \121\305\212\114\144\135\220\103\043\216\153\114\027\170\314\350 \277\365\073\344\250\110\317\255\233\014\337\062\112\323\331\022 \216\043\170\015\055\257\237\257\236\074\011\302\227\000\355\072 \151\034\161\077\071\337\323\217\304\146\365\357\066\224\017\363  $\label{eq:condition} $$ 35\222\266\226\137\220\246\335\163\252\246\040\224\224\045\152$  $\label{eq:condition} $$ \011\014\162\344\023\043\140\114\243\312\027\056\173\147\000\333$ \320\315\352\172\037\071\046\127\211\060\167\313\116\345\225\105  $\label{eq:condition} $$ \frac{117}137\sqrt{373}\sqrt{66}\sqrt{134}\sqrt{75}\sqrt{371}\sqrt{40}\sqrt{265}\sqrt{72}\sqrt{20}\sqrt{45}\sqrt{117}\sqrt{223}\sqrt{62}\sqrt{132}$ \356\301\226\350\351\126\004\260\111\141\115\354\170\250\235\030 \301\377\330\352\057\126\357\225\053\173\004\136\147\343\125\100  $\label{eq:condition} $$ \355\071\004\371\013\171\365\152\214\134\017\211\232\220\307\315$ \213\336\333\046\065\241\156\315\263\102\362\242\017\073\014\216 \223\377\024\317\374\367\223\367\344\101\010\156\031\122\021\017  $\label{eq:condition} $$ 123\031\163\170\014\317\330\205\201\370\255\125\310\260\236\106$ \143\257\234\122\356\134\277\360\300\133\067\036\011\040\322\076 \043\306\241\025\112\016\066\176\060\305\171\152\274\042\210\331 \014\122\100\037\335\116\017\147\046\026\322\255\027\034 **END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE
CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE
CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

```
# Trust for "DigiCert SMIME RSA4096 Root G5"
```

<sup>#</sup> Issuer: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US

<sup>#</sup> Serial Number:05:f6:ba:04:23:83:46:cb:7d:5c:e6:b9:5b:ba:1c:55

<sup>#</sup> Subject: CN=DigiCert SMIME RSA4096 Root G5,O="DigiCert, Inc.",C=US

<sup>#</sup> Not Valid Before: Fri Jan 15 00:00:00 2021

<sup>#</sup> Not Valid After: Sun Jan 14 23:59:59 2046

<sup>#</sup> Fingerprint (SHA-256):

<sup>90:37:0</sup>D:3E:FA:88:BF:58:C3:01:05:BA:25:10:4A:35:84:60:A7:FA:52:DF:C2:01:1D:F2:33:A0:F4:17:91:2A

<sup>#</sup> Fingerprint (SHA1): 5B:C5:AD:E2:9A:A7:54:DA:84:89:53:A5:FE:D7:5B:46:86:D0:57:08

```
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "DigiCert SMIME RSA4096 Root G5"
CKA_CERT_SHA1_HASH MULTILINE_OCTAL
\133\305\255\342\232\247\124\332\204\211\123\245\376\327\133\106
\206\320\127\010
END
CKA CERT MD5 HASH MULTILINE OCTAL
\321\173\340\265\077\065\162\237\175\276\013\245\244\035\251\156
END
CKA ISSUER MULTILINE OCTAL
\label{eq:condition} $$ \060\11\006\003\125\004\006\023\002\125\123\061 $$
\label{eq:condition} $$ \027\060\025\006\003\125\004\012\023\016\104\151\147\151\103\145 
\162\164\054\040\111\156\143\056\061\047\060\045\006\003\125\004
\label{eq:condition} $$ \03\023\036\104\151\147\151\103\145\162\164\040\123\115\111\115
\105\040\122\123\101\064\060\071\066\040\122\157\157\164\040\107
\065
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\005\366\272\004\043\203\106\313\175\134\346\271\133\272
\034\125
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS TRUSTED DELEGATOR
CKA TRUST CODE SIGNING CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "Certainly Root R1"
# Issuer: CN=Certainly Root R1,O=Certainly,C=US
# Serial Number:00:8e:0f:f9:4b:90:71:68:65:33:54:f4:d4:44:39:b7:e0
# Subject: CN=Certainly Root R1,O=Certainly,C=US
# Not Valid Before: Thu Apr 01 00:00:00 2021
# Not Valid After: Sun Apr 01 00:00:00 2046
# Fingerprint (SHA-256):
77:B8:2C:D8:64:4C:43:05:F7:AC:C5:CB:15:6B:45:67:50:04:03:3D:51:C6:0C:62:02:A8:E0:C3:34:67:D3:A0
# Fingerprint (SHA1): A0:50:EE:0F:28:71:F4:27:B2:12:6D:6F:50:96:25:BA:CC:86:42:AF
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA_TOKEN CK_BBOOL CK_TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA_MODIFIABLE CK_BBOOL CK_FALSE
CKA_LABEL UTF8 "Certainly Root R1"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA_SUBJECT MULTILINE_OCTAL
\label{eq:condition} $$ \060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061 $$
```

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

\022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151 \156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145 \162\164\141\151\156\154\171\040\122\157\157\164\040\122\061 END

CKA ID UTF8 "0"

#### CKA\_ISSUER MULTILINE\_OCTAL

# CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\021\000\216\017\371\113\220\161\150\145\063\124\364\324\104\071\267\340$ 

**END** 

# CKA\_VALUE MULTILINE\_OCTAL

 $\label{eq:condition} $$ \0.060\202\005\107\060\202\003\057\240\003\002\001\002\002\002\1\000$ \216\017\371\113\220\161\150\145\063\124\364\324\104\071\267\340 \060\015\006\011\052\206\110\206\367\015\001\001\013\005\000\060 \060\020\006\003\125\004\012\023\011\103\145\162\164\141\151\156 \154\171\061\032\060\030\006\003\125\004\003\023\021\103\145\162 \027\015\062\061\060\064\060\061\060\060\060\060\060\060\060\132\027 \015\064\066\060\064\060\061\060\060\060\060\060\060\060\132\060\075 \061\013\060\011\006\003\125\004\006\023\002\125\123\061\022\060 \020\006\003\125\004\012\023\011\103\145\162\164\141\151\156\154  $\label{eq:condition} $$ \frac{171 \cdot 061 \cdot 032 \cdot 060 \cdot 030 \cdot 006 \cdot 003 \cdot 125 \cdot 004 \cdot 003 \cdot 023 \cdot 021 \cdot 103 \cdot 145 \cdot 162 \cdot 164}{164} $$$ \141\151\156\154\171\040\122\157\157\164\040\122\061\060\202\002 \042\060\015\006\011\052\206\110\206\367\015\001\001\001\005\000  $\label{eq:condition} $$ \003\202\002\017\000\060\202\002\012\002\202\002\001\000\320\066 $$$ \324\037\352\335\253\344\321\266\346\373\042\300\335\023\015\152 \173\042\023\034\227\074\150\143\146\062\234\003\265\215\244\201 \203\332\170\060\021\317\334\262\053\276\222\277\216\344\304\023 \276\244\150\114\332\002\150\026\164\276\262\335\004\344\153\052 \335\067\037\140\054\333\365\367\241\174\225\267\014\160\206\056 \361\072\357\122\367\314\323\233\371\213\276\016\337\061\267\235  $\label{eq:condition} $$ \frac{365}{345}\frac{012}{64}265\frac{377}{173}242\frac{344}{207}241 $$ \306\257\027\000\357\003\221\355\251\034\116\161\075\322\213\154 \211\364\170\206\346\152\111\240\316\265\322\260\253\233\366\364 \324\056\343\162\371\066\306\353\025\267\045\214\072\374\045\015 \263\042\163\041\164\310\112\226\141\222\365\057\013\030\245\364 \255\342\356\101\275\001\171\372\226\214\215\027\002\060\264\371 \257\170\032\214\264\066\020\020\007\005\160\320\364\061\220\212 \121\305\206\046\171\262\021\210\136\305\360\012\124\315\111\246 \277\002\234\322\104\247\355\343\170\357\106\136\155\161\321\171 \160\034\106\137\121\351\311\067\334\137\176\151\173\101\337\064 \105\340\073\204\364\241\212\012\066\236\067\314\142\122\341\211

\015\050\371\172\043\261\015\075\075\232\375\235\201\357\054\220 \300\173\104\116\273\111\340\016\112\126\222\274\313\265\335\171 \027\211\221\336\141\211\164\222\250\343\062\205\276\116\205\244 \113\131\313\053\305\170\216\161\124\320\002\067\231\214\345\111 \352\340\124\162\244\021\006\057\013\214\301\133\276\265\241\260 \123\156\234\270\140\221\037\131\153\371\055\364\224\012\227\265 \354\305\166\003\124\033\145\122\272\114\222\126\121\065\240\100 \330\051\333\256\122\166\073\055\060\100\233\212\320\102\126\264 \267\210\001\244\207\073\123\226\315\243\026\217\363\146\252\027 \261\307\140\340\301\103\005\014\356\233\133\140\157\006\134\207 \133\047\371\100\021\236\234\063\301\267\345\065\127\005\177\047 \316\027\040\214\034\374\361\373\332\061\051\111\355\365\013\204 \247\117\301\366\116\302\050\234\372\356\340\257\007\373\063\021 \172\041\117\013\041\020\266\100\072\253\042\072\004\234\213\233 \204\206\162\232\322\247\245\304\264\165\221\251\053\043\002\003 \001\000\001\243\102\060\100\060\016\006\003\125\035\017\001\001 \377\004\004\003\002\001\006\060\017\006\003\125\035\023\001\001 \377\004\005\060\003\001\001\377\060\035\006\003\125\035\016\004 \026\004\024\340\252\077\045\215\237\104\134\301\072\350\056\256 \167\114\204\076\147\014\364\060\015\006\011\052\206\110\206\367 \015\001\001\013\005\000\003\202\002\001\000\271\127\257\270\022 \332\127\203\217\150\013\063\035\003\123\125\364\225\160\344\053  $\label{eq:condition} $$ \075\260\071\353\372\211\142\375\367\326\030\004\057\041\064\335 $$$ \361\150\360\325\226\132\336\302\200\243\301\215\306\152\367\131 \167\256\025\144\317\133\171\005\167\146\352\214\323\153\015\335 \361\131\054\301\063\245\060\200\025\105\007\105\032\061\042\266 \222\000\253\231\115\072\217\167\257\251\042\312\057\143\312\025  $\label{eq:condition} $\326\307\306\360\075\154\374\034\015\230\020\141\236\021\242\042$ \327\012\362\221\172\153\071\016\057\060\303\066\111\237\340\351 \017\002\104\120\067\224\125\175\352\237\366\073\272\224\245\114 \351\274\076\121\264\350\312\222\066\124\155\134\045\050\332\335 \255\024\375\323\356\342\042\005\353\320\362\267\150\022\327\132 \212\101\032\306\222\245\132\073\143\105\117\277\341\072\167\042 \057\134\277\106\371\132\003\205\023\102\137\312\336\123\327\142 \265\246\065\004\302\107\377\231\375\204\337\134\316\351\136\200 \050\101\362\175\347\036\220\330\117\166\076\202\074\015\374\245 \003\372\173\032\331\105\036\140\332\304\216\371\374\053\311\173 \225\305\052\377\252\211\337\202\061\017\162\377\014\047\327\012  $\label{eq:condition} $$ \036\126\000\120\036\014\220\301\226\265\330\024\205\273\247\015 $$$ \026\301\370\007\044\033\272\205\241\032\005\011\200\272\225\143 \311\072\354\045\237\177\235\272\244\107\025\233\104\160\361\152 \113\326\070\136\103\363\030\176\120\156\351\132\050\346\145\346 \167\033\072\375\035\276\003\046\243\333\324\341\273\176\226\047 \053\035\356\244\373\332\045\124\023\003\336\071\306\303\037\115 \220\354\217\033\112\322\034\355\205\225\070\120\171\106\326\301 \220\120\061\251\134\232\156\035\365\063\126\213\247\231\322\362 \310\054\063\223\222\060\307\116\214\145\063\020\144\027\375\044  $\label{eq:condition} $$ \027\226\321\215\302\072\152\053\353\023\213\104\362\041\363\112$   $\label{eq:control_control_control_control} $$ \032\267\167\137\327\355\210\244\162\345\071\037\225\235\276\147 \301\160\021\075\273\364\370\111\267\343\046\227\072\237\322\137 \174\373\300\231\174\071\051\340\173\035\277\015\247\217\322\051 \064\156\044\025\313\336\220\136\277\032\304\146\352\302\346\272 \071\137\212\231\251\101\131\007\260\054\257$ 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Certainly Root R1"
- # Issuer: CN=Certainly Root R1,O=Certainly,C=US
- # Serial Number:00:8e:0f:f9:4b:90:71:68:65:33:54:f4:d4:44:39:b7:e0
- # Subject: CN=Certainly Root R1,O=Certainly,C=US
- # Not Valid Before: Thu Apr 01 00:00:00 2021
- # Not Valid After: Sun Apr 01 00:00:00 2046
- # Fingerprint (SHA-256):

77:B8:2C:D8:64:4C:43:05:F7:AC:C5:CB:15:6B:45:67:50:04:03:3D:51:C6:0C:62:02:A8:E0:C3:34:67:D3:A0

# Fingerprint (SHA1): A0:50:EE:0F:28:71:F4:27:B2:12:6D:6F:50:96:25:BA:CC:86:42:AF

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certainly Root R1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\240\120\356\017\050\161\364\047\262\022\155\157\120\226\045\272

\314\206\102\257

**END** 

**END** 

 ${\tt CKA\_CERT\_MD5\_HASH\ MULTILINE\_OCTAL}$ 

\007\160\324\076\202\207\240\372\063\066\023\364\372\063\347\022

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \002\021\000\216\017\371\113\220\161\150\145\063\124\364\324\104$$$ 

 $\ \ \, \backslash 071\backslash 267\backslash 340$ 

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "Certainly Root E1"

- # Issuer: CN=Certainly Root E1,O=Certainly,C=US
- # Serial Number:06:25:33:b1:47:03:33:27:5c:f9:8d:9a:b9:bf:cc:f8
- # Subject: CN=Certainly Root E1,O=Certainly,C=US
- # Not Valid Before: Thu Apr 01 00:00:00 2021
- # Not Valid After: Sun Apr 01 00:00:00 2046
- # Fingerprint (SHA-256):

B4:58:5F:22:E4:AC:75:6A:4E:86:12:A1:36:1C:5D:9D:03:1A:93:FD:84:FE:BB:77:8F:A3:06:8B:0F:C4:2D:C2

# Fingerprint (SHA1): F9:E1:6D:DC:01:89:CF:D5:82:45:63:3E:C5:37:7D:C2:EB:93:6F:2B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "Certainly Root E1"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA\_SUBJECT MULTILINE\_OCTAL

\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061

\156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145

\162\164\141\151\156\154\171\040\122\157\157\164\040\105\061

**END** 

CKA ID UTF8 "0"

# CKA\_ISSUER MULTILINE\_OCTAL

\060\075\061\013\060\011\006\003\125\004\006\023\002\125\123\061 \022\060\020\006\003\125\004\012\023\011\103\145\162\164\141\151 \156\154\171\061\032\060\030\006\003\125\004\003\023\021\103\145 \162\164\141\151\156\154\171\040\122\157\157\164\040\105\061

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\020\006\045\063\261\107\003\063\047\134\371\215\232\271\277 \314\370

**END** 

#### CKA VALUE MULTILINE OCTAL

\370\202\227\200\352\217\310\112\136\052\175\210\150\247\001\142 \024\221\044\172\134\236\243\027\175\212\206\041\064\030\120\033 \020\336\320\067\113\046\307\031\140\200\351\064\275\140\031\066 \100\326\051\207\011\074\221\172\366\274\023\043\335\131\116\004 \136\317\310\002\034\030\123\301\061\330\332\040\351\104\215\344 \166\243\102\060\100\060\016\006\003\125\035\017\001\001\377\004 \004\003\002\001\006\060\017\006\003\125\035\023\001\001\377\004  $\label{eq:condition} $$ \005\000\003\001\001\377\060\035\006\003\125\035\016\004\026\004$ \024\363\050\030\313\144\165\356\051\052\353\355\256\043\130\070 \205\353\310\042\007\060\012\006\010\052\206\110\316\075\004\003 \003\003\150\000\060\145\002\061\000\261\216\132\040\303\262\031 \142\115\336\260\117\337\156\322\160\212\361\237\176\152\214\346 \272\336\203\151\312\151\263\251\005\265\226\222\027\207\302\322 \352\320\173\316\330\101\133\174\256\002\060\106\336\352\313\135 \232\354\062\302\145\026\260\114\060\134\060\363\332\116\163\206 \006\330\316\211\004\110\067\067\370\335\063\121\235\160\257\173 \125\330\001\056\175\005\144\016\206\270\221

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

- # Trust for "Certainly Root E1"
- # Issuer: CN=Certainly Root E1,O=Certainly,C=US
- # Serial Number:06:25:33:b1:47:03:33:27:5c:f9:8d:9a:b9:bf:cc:f8
- # Subject: CN=Certainly Root E1,O=Certainly,C=US
- # Not Valid Before: Thu Apr 01 00:00:00 2021
- # Not Valid After: Sun Apr 01 00:00:00 2046
- # Fingerprint (SHA-256):

B4:58:5F:22:E4:AC:75:6A:4E:86:12:A1:36:1C:5D:9D:03:1A:93:FD:84:FE:BB:77:8F:A3:06:8B:0F:C4:2D:C2

# Fingerprint (SHA1): F9:E1:6D:DC:01:89:CF:D5:82:45:63:3E:C5:37:7D:C2:EB:93:6F:2B

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "Certainly Root E1"

CKA\_CERT\_SHA1\_HASH MULTILINE\_OCTAL

\371\341\155\334\001\211\317\325\202\105\143\076\305\067\175\302 \353\223\157\053

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \012\236\312\315\076\122\120\306\066\363\113\243\355\247\123\351 $$ END$ 

CKA\_ISSUER MULTILINE\_OCTAL

```
END
CKA SERIAL NUMBER MULTILINE OCTAL
\002\020\006\045\063\261\107\003\063\047\134\371\215\232\271\277
\314\370
END
CKA_TRUST_SERVER_AUTH CK_TRUST CKT_NSS_TRUSTED_DELEGATOR
CKA TRUST EMAIL PROTECTION CK TRUST CKT NSS MUST VERIFY TRUST
CKA_TRUST_CODE_SIGNING CK_TRUST CKT_NSS_MUST_VERIFY_TRUST
CKA_TRUST_STEP_UP_APPROVED CK_BBOOL CK_FALSE
# Certificate "E-Tugra Global Root CA RSA v3"
# Issuer: CN=E-Tugra Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR
# Serial Number:0d:4d:c5:cd:16:22:95:96:08:7e:b8:0b:7f:15:06:34:fb:79:10:34
# Subject: CN=E-Tugra Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG
A.S.,L=Ankara,C=TR
# Not Valid Before: Wed Mar 18 09:07:17 2020
# Not Valid After: Sun Mar 12 09:07:17 2045
# Fingerprint (SHA-256):
EF:66:B0:B1:0A:3C:DB:9F:2E:36:48:C7:6B:D2:AF:18:EA:D2:BF:E6:F1:17:65:5E:28:C4:06:0D:A1:A3:F4:C2
# Fingerprint (SHA1): E9:A8:5D:22:14:52:1C:5B:AA:0A:B4:BE:24:6A:23:8A:C9:BA:E2:A9
CKA_CLASS CK_OBJECT_CLASS CKO_CERTIFICATE
CKA TOKEN CK BBOOL CK TRUE
CKA_PRIVATE CK_BBOOL CK_FALSE
CKA MODIFIABLE CK BBOOL CK FALSE
CKA LABEL UTF8 "E-Tugra Global Root CA RSA v3"
CKA_CERTIFICATE_TYPE CK_CERTIFICATE_TYPE CKC_X_509
CKA SUBJECT MULTILINE OCTAL
\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122
\label{eq:condition} $$ \0061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162$$
\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165
\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033
\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124
\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006
\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154
\label{eq:local_
\040\166\063
END
CKA ID UTF8 "0"
```

CKA\_ISSUER MULTILINE\_OCTAL

\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122 \061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162 \141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165 \147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033 \006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124 \162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006 \003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154

\157\142\141\154\040\122\157\157\164\040\103\101\040\122\123\101\040\166\063

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

 $\label{eq:condition} $$ \002\024\015\115\305\315\026\042\225\226\010\176\270\013\177\025\006\064\373\171\020\064$ 

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\005\363\060\202\003\333\240\003\002\001\002\002\002\002\15$ \115\305\315\026\042\225\226\010\176\270\013\177\025\006\064\373 \171\020\064\060\015\006\011\052\206\110\206\367\015\001\001\013  $\label{eq:condition} $$ \005\000\00201\200\061\013\060\011\006\003\125\004\006\023\002$ \124\122\061\017\060\015\006\003\125\004\007\023\006\101\156\153 \141\162\141\061\031\060\027\006\003\125\004\012\023\020\105\055 \060\033\006\003\125\004\013\023\024\105\055\124\165\147\162\141  $\label{eq:condition} $$ \040\124\162\165\163\164\040\103\145\156\164\145\162\061\046\060$$$ \044\006\003\125\004\003\023\035\105\055\124\165\147\162\141\040 \107\154\157\142\141\154\040\122\157\157\164\040\103\101\040\122 \123\101\040\166\063\060\036\027\015\062\060\060\063\061\070\060 \071\060\067\061\067\132\027\015\064\065\060\063\061\062\060\071 \060\067\061\067\132\060\201\200\061\013\060\011\006\003\125\004  $\label{eq:condition} $$ \006\023\002\124\122\061\017\060\015\006\003\125\004\007\023\006$$ \101\156\153\141\162\141\061\031\060\027\006\003\125\004\012\023 \020\105\055\124\165\147\162\141\040\105\102\107\040\101\056\123 \056\061\035\060\033\006\003\125\004\013\023\024\105\055\124\165 \147\162\141\040\124\162\165\163\164\040\103\145\156\164\145\162 \061\046\060\044\006\003\125\004\003\023\035\105\055\124\165\147 \162\141\040\107\154\157\142\141\154\040\122\157\157\164\040\103 \101\040\122\123\101\040\166\063\060\202\002\042\060\015\006\011  $\label{eq:condition} $$ \052\206\110\206\367\015\001\001\001\005\000\003\202\002\017\000 $$$ \060\202\002\012\002\202\002\001\000\242\146\360\211\267\162\173 \356\011\311\143\322\323\103\335\136\303\246\204\070\112\361\215 \201\273\024\275\107\350\100\027\363\075\303\170\105\162\246\056 \220\336\232\072\324\040\161\312\274\237\035\113\227\012\307\061 \272\076\327\376\045\251\052\216\066\364\321\057\307\267\251\135 \063\334\060\160\370\100\154\113\262\246\061\141\321\064\074\075  $\label{eq:condition} $$ \061\172\307\257\304\247\247\204\341\227\244\350\113\366\027\174$$$ \356\074\007\355\342\212\127\334\266\373\370\103\045\120\352\047 \201\250\206\274\217\122\112\226\072\140\032\226\273\375\163\364 \205\375\203\375\177\204\155\064\154\177\152\267\113\001\003\277 \255\151\267\327\062\331\365\127\152\351\206\202\076\245\146\061 \263\026\075\302\363\046\140\062\323\122\036\260\154\244\067\076 \364\365\257\353\341\337\200\006\317\052\101\347\146\011\341\113 \227\347\167\275\041\155\051\266\147\303\055\176\355\326\171\145 \321\317\072\266\321\261\136\126\141\120\172\132\316\116\120\061 \200\003\230\107\347\344\030\174\104\132\306\244\263\073\306\306 \303\072\360\154\303\213\310\244\221\005\363\365\331\266\252\006

\241\267\253\344\261\352\041\024\134\203\244\374\377\266\120\323 \214\022\046\231\166\160\351\300\017\246\164\374\273\320\033\170 \316\162\222\342\050\234\274\346\351\011\330\072\323\211\346\276 \056\167\337\001\012\157\226\366\345\215\074\115\122\166\032\126 \341\163\176\027\254\075\255\154\243\122\022\030\160\346\200\116  $\label{eq:condition} $$ \063\362\176\046\062\254\005\215\070\244\346\166\074\237\020\151 $$$ \016\155\235\322\301\171\040\153\133\317\063\215\321\224\166\065 \347\135\125\307\267\254\050\253\106\314\347\073\041\265\012\012 \344\112\131\334\201\065\113\104\225\022\012\147\245\241\377\133 \000\007\322\300\314\371\077\374\237\063\362\000\370\214\154\207 \235\006\055\361\357\343\346\006\372\305\146\023\133\374\120\007 \236\161\206\262\332\157\164\060\317\223\123\350\334\042\326\336 \040\037\141\215\243\056\243\170\062\220\154\334\254\062\265\005  $\label{eq:condition} $\344\365\074\063\015\326\340\207\167\027\114\235\260\330\011\250$ \015\127\367\104\205\360\310\004\276\134\135\132\343\027\216\124 \143\151\177\111\164\144\005\214\243\002\003\001\000\001\243\143  $\label{eq:condition} $$ \000\141\060\017\006\003\125\035\023\001\001\377\004\005\060\003$ \001\001\377\060\037\006\003\125\035\043\004\030\060\026\200\024 \262\264\256\346\055\367\046\325\252\165\055\166\113\300\033\123  $\label{eq:condition} $$ \041\320\110\357\060\035\006\003\125\035\016\004\026\004\024\262$ \264\256\346\055\367\046\325\252\165\055\166\113\300\033\123\041 \320\110\357\060\016\006\003\125\035\017\001\001\377\004\004\003  $\label{eq:condition} $$ \002\001\006\060\015\006\011\052\206\110\206\367\015\001\001\013$ \005\000\003\202\002\001\000\211\250\162\177\214\353\316\056\030  $\label{eq:condition} $$ 304\020\200\055\020\014\377\373\024\315\004\340\024\074\116\232 $$$ \373\237\051\277\042\236\127\271\202\163\022\143\046\265\314\220 \351\322\052\051\356\234\055\314\054\231\276\105\047\344\261\161 \355\344\070\225\061\101\362\175\172\143\170\337\312\066\026\057 \202\210\237\274\021\107\117\166\115\310\055\216\353\337\055\174 \116\073\332\256\366\343\332\135\024\246\256\350\205\104\235\006  $\label{eq:condition} $$ \frac{156}{216}\frac{373}{357}\frac{172}{112}\frac{55}{053}\frac{050}{030}\frac{376}{277}\frac{220}{054}\frac{165}{165} $$$ \026\237\017\352\226\175\005\356\233\023\245\104\154\370\003\320 \335\043\341\375\003\022\022\010\364\030\064\263\340\067\013\167 \021\001\110\277\141\264\265\370\031\331\313\115\352\243\214\357 \375\360\006\265\155\222\364\112\141\120\204\355\354\111\323\344 \276\150\346\056\343\061\013\124\013\032\222\326\202\330\266\242 \145\074\146\004\371\125\332\154\373\333\265\024\146\115\224\203  $\label{eq:condition} $$ \036\246\053\262\376\167\100\206\253\347\337\012\311\375 $$$  $\label{eq:condition} $$ \366\335\207\126\030\330\260\054\125\140\226\372\010\176\122\220 $$$ \365\113\246\056\207\174\313\040\333\006\076\240\135\003\167\175 \242\074\023\033\051\242\023\125\240\075\024\042\257\157\270\320 \232\033\162\335\005\001\215\206\140\277\244\147\356\265\245\015 \321\177\346\032\053\142\146\303\007\272\347\240\110\034\070\303 \351\105\373\247\177\374\355\002\150\032\312\167\022\167\246\000 \125\050\024\354\326\307\022\242\033\145\102\351\221\350\313\076 \207\211\124\135\331\257\235\227\234\151\347\012\377\017\132\170 \213\143\052\114\175\107\224\077\336\113\351\123\320\060\361\305 \366\236\111\337\073\240\221\243\243\376\315\130\314\352\337\257

 $\label{eq:control_loss} $$157\050\073\240\151\233\217\354\256\053\124\235\233\004\261\107\040\257\226\022\076\143\224\035\004\347\056\273\206\307\014\232\210\277\166\107\357\367\260\013\227\146\322\104\317\140\122\007\341\325\054\112\072\047\141\167\312\327\217\347\207\016\060\377\014\273\004\342\141\303\242\310\227\141\216\264\060\152\074\155\302\007\137\112\163\057\077\371\026\212\001\146\357\272\221\312\122\127\173\256\324\346\017\335\013\172\177\213\236\046\040\317\073\357\201\161\203\131$ 

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "E-Tugra Global Root CA RSA v3"

# Issuer: CN=E-Tugra Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR

# Serial Number:0d:4d:c5:cd:16:22:95:96:08:7e:b8:0b:7f:15:06:34:fb:79:10:34

# Subject: CN=E-Tugra Global Root CA RSA v3,OU=E-Tugra Trust Center,O=E-Tugra EBG

A.S.,L=Ankara,C=TR

# Not Valid Before: Wed Mar 18 09:07:17 2020 # Not Valid After: Sun Mar 12 09:07:17 2045

# Fingerprint (SHA-256):

EF:66:B0:B1:0A:3C:DB:9F:2E:36:48:C7:6B:D2:AF:18:EA:D2:BF:E6:F1:17:65:5E:28:C4:06:0D:A1:A3:F4:C2

# Fingerprint (SHA1): E9:A8:5D:22:14:52:1C:5B:AA:0A:B4:BE:24:6A:23:8A:C9:BA:E2:A9

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA PRIVATE CK BBOOL CK FALSE

CKA MODIFIABLE CK BBOOL CK FALSE

CKA\_LABEL UTF8 "E-Tugra Global Root CA RSA v3"

CKA CERT SHA1 HASH MULTILINE OCTAL

\351\250\135\042\024\122\034\133\252\012\264\276\044\152\043\212

\311\272\342\251

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ \042\276\020\366\302\370\003\210\163\137\063\051\107\050\107\244 $$$ 

**END** 

CKA ISSUER MULTILINE OCTAL

 $\label{eq:control} $$ \000\201\200\061\013\060\011\006\003\125\004\0003\125\0004\0006\101\156\153\141\162\141\061\031\060\027\006\003\125\0004\012\023\020\105\055\124\165\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033\006\003\125\0004\013\023\024\105\055\124\165\147\162\141\040\124\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006\003\125\0004\003\023\035\105\055\124\165\147\162\141\040\107\154\157\142\141\154\040\122\157\157\164\040\103\101\040\122\123\101\040\166\063$ 

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \020\024\015\115\305\315\026\042\225\226\010\176\270\013\177\025 $$$ 

```
\006\064\373\171\020\064
```

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

#

# Certificate "E-Tugra Global Root CA ECC v3"

#

# Issuer: CN=E-Tugra Global Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR

# Serial Number:26:46:19:77:31:e1:4f:6f:28:36:de:39:51:86:e6:d4:97:88:22:c1

# Subject: CN=E-Tugra Global Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra EBG

A.S.,L=Ankara,C=TR

# Not Valid Before: Wed Mar 18 09:46:58 2020

# Not Valid After: Sun Mar 12 09:46:58 2045

# Fingerprint (SHA-256):

87:3F:46:85:FA:7F:56:36:25:25:2E:6D:36:BC:D7:F1:6F:C2:49:51:F2:64:E4:7E:1B:95:4F:49:08:CD:CA:13

# Fingerprint (SHA1): 8A:2F:AF:57:53:B1:B0:E6:A1:04:EC:5B:6A:69:71:6D:F6:1C:E2:84

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_CERTIFICATE

CKA TOKEN CK BBOOL CK TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA LABEL UTF8 "E-Tugra Global Root CA ECC v3"

CKA\_CERTIFICATE\_TYPE CK\_CERTIFICATE\_TYPE CKC\_X\_509

CKA SUBJECT MULTILINE OCTAL

\060\201\200\061\013\060\011\006\003\125\004\006\023\002\124\122

 $\label{eq:condition} $$ \0061\017\060\015\006\003\125\004\007\023\006\101\156\153\141\162$$$ 

\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165

\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033

 $\\ \\006\\ \\003\\ \\125\\ \\004\\ \\013\\ \\023\\ \\024\\ \\105\\ \\055\\ \\124\\ \\165\\ \\147\\ \\162\\ \\141\\ \\040\\ \\124$ 

\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006

\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154

\157\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103

\040\166\063

**END** 

CKA\_ID UTF8 "0"

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:control} $$ \000\201\200\061\013\060\011\006\003\125\004\0003\125\0004\0006\101\156\153\141\162\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033\006\003\125\0004\013\023\024\105\055\124\165\147\162\141\040\124\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006\003\125\0004\003\023\035\105\055\124\165\147\162\141\040\107\154\157\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103\040\166\063$ 

**END** 

#### CKA SERIAL NUMBER MULTILINE OCTAL

\002\024\046\106\031\167\061\341\117\157\050\066\336\071\121\206 \346\324\227\210\042\301

**END** 

#### CKA VALUE MULTILINE OCTAL

 $\label{eq:condition} $$ \060\202\002\245\060\202\002\0052\240\003\002\001\0002\002\002\002\004\046$ \106\031\167\061\341\117\157\050\066\336\071\121\206\346\324\227 \210\042\301\060\012\006\010\052\206\110\316\075\004\003\003\060  $\label{eq:condition} $$ \201\200\061\013\060\011\006\003\125\004\006\023\002\124\122\061 $$$ \017\060\015\006\003\125\004\007\023\006\101\156\153\141\162\141 \061\031\060\027\006\003\125\004\012\023\020\105\055\124\165\147 \162\141\040\105\102\107\040\101\056\123\056\061\035\060\033\006 \003\125\004\013\023\024\105\055\124\165\147\162\141\040\124\162 \165\163\164\040\103\145\156\164\145\162\061\046\060\044\006\003 \125\004\003\023\035\105\055\124\165\147\162\141\040\107\154\157 \142\141\154\040\122\157\157\164\040\103\101\040\105\103\103\040 \166\063\060\036\027\015\062\060\060\063\061\070\060\071\064\066 \065\070\132\027\015\064\065\060\063\061\062\060\071\064\066\065 \070\132\060\201\200\061\013\060\011\006\003\125\004\006\023\002  $\label{eq:condition} $$ \frac{124}122\\061\\017\\060\\015\\006\\003\\125\\004\\007\\023\\006\\101\\156\\153$ \141\162\141\061\031\060\027\006\003\125\004\012\023\020\105\055 \124\165\147\162\141\040\105\102\107\040\101\056\123\056\061\035 \040\124\162\165\163\164\040\103\145\156\164\145\162\061\046\060 \044\006\003\125\004\003\023\035\105\055\124\165\147\162\141\040 \107\154\157\142\141\154\040\122\157\157\164\040\103\101\040\105 \103\103\040\166\063\060\166\060\020\006\007\052\206\110\316\075 \002\001\006\005\053\201\004\000\042\003\142\000\004\216\230\051 \277\307\020\036\047\333\253\003\314\050\054\330\136\110\031\020 \051\314\313\131\201\314\214\270\222\027\211\203\052\222\366\303 \244\035\114\142\325\237\326\240\106\334\034\274\166\301\343\107 \320\133\023\332\347\245\263\146\110\347\041\232\112\117\206\012 \175\154\352\115\062\200\012\262\172\011\233\151\113\230\201\342 \056\354\002\160\226\037\375\365\106\316\312\334\202\243\143\060 \141\060\017\006\003\125\035\023\001\001\377\004\005\060\003\001 \001\377\060\037\006\003\125\035\043\004\030\060\026\200\024\377 \202\061\162\076\371\304\146\154\255\070\236\321\260\121\210\245 \220\314\365\060\035\006\003\125\035\016\004\026\004\024\377\202  $\label{eq:condition} $$ \061\162\076\371\304\146\154\255\070\236\321\260\121\210\245\220 $$$ \314\365\060\016\006\003\125\035\017\001\001\377\004\004\003\002 \001\006\060\012\006\010\052\206\110\316\075\004\003\003\003\151 \000\060\146\002\061\000\346\005\130\151\141\345\055\312\015\313 \361\031\010\275\326\375\121\222\032\176\143\124\004\220\221\232 \065\221\071\231\372\007\251\146\223\272\310\150\324\212\077\372 \355\156\026\002\047\267\002\061\000\335\132\027\053\166\035\145 \102\226\246\254\135\212\171\126\330\212\033\337\232\336\137\307 \120\217\261\133\161\014\046\337\152\100\000\354\063\221\041\161 \276\150\344\043\244\331\255\241\067

**END** 

CKA\_NSS\_MOZILLA\_CA\_POLICY CK\_BBOOL CK\_TRUE CKA\_NSS\_SERVER\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE CKA\_NSS\_EMAIL\_DISTRUST\_AFTER CK\_BBOOL CK\_FALSE

# Trust for "E-Tugra Global Root CA ECC v3"

# Issuer: CN=E-Tugra Global Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra EBG A.S.,L=Ankara,C=TR

# Serial Number:26:46:19:77:31:e1:4f:6f:28:36:de:39:51:86:e6:d4:97:88:22:c1

# Subject: CN=E-Tugra Global Root CA ECC v3,OU=E-Tugra Trust Center,O=E-Tugra EBG

A.S.,L=Ankara,C=TR

# Not Valid Before: Wed Mar 18 09:46:58 2020

# Not Valid After: Sun Mar 12 09:46:58 2045

# Fingerprint (SHA-256):

87:3F:46:85:FA:7F:56:36:25:25:2E:6D:36:BC:D7:F1:6F:C2:49:51:F2:64:E4:7E:1B:95:4F:49:08:CD:CA:13

# Fingerprint (SHA1): 8A:2F:AF:57:53:B1:B0:E6:A1:04:EC:5B:6A:69:71:6D:F6:1C:E2:84

CKA\_CLASS CK\_OBJECT\_CLASS CKO\_NSS\_TRUST

CKA\_TOKEN CK\_BBOOL CK\_TRUE

CKA\_PRIVATE CK\_BBOOL CK\_FALSE

CKA\_MODIFIABLE CK\_BBOOL CK\_FALSE

CKA\_LABEL UTF8 "E-Tugra Global Root CA ECC v3"

CKA CERT SHA1 HASH MULTILINE OCTAL

\212\057\257\123\261\260\346\241\004\354\133\152\151\161\155 \366\034\342\204

**END** 

CKA\_CERT\_MD5\_HASH MULTILINE\_OCTAL

 $\label{eq:condition} $$ 106\274\201\273\361\265\036\367\113\226\274\024\342\347\047\144 $$$ 

**END** 

CKA\_ISSUER MULTILINE\_OCTAL

 $\label{eq:condition} $$ \000\201\200\061\013\060\011\006\003\125\004\0003\125\006\101\156\153\141\162\141\061\031\060\027\006\003\125\004\012\023\020\105\055\124\165\147\162\141\040\105\102\107\040\101\056\123\056\061\035\060\033\006\003\125\004\013\023\024\105\055\124\165\147\162\141\040\124$ 

\162\165\163\164\040\103\145\156\164\145\162\061\046\060\044\006

\003\125\004\003\023\035\105\055\124\165\147\162\141\040\107\154

\157\142\141\154\040\122\157\157\164\040\103\101\040\105\103\103\\040\166\063

**END** 

CKA\_SERIAL\_NUMBER MULTILINE\_OCTAL

\002\024\046\106\031\167\061\341\117\157\050\066\336\071\121\206 \346\324\227\210\042\301

**END** 

CKA\_TRUST\_SERVER\_AUTH CK\_TRUST CKT\_NSS\_TRUSTED\_DELEGATOR
CKA\_TRUST\_EMAIL\_PROTECTION CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST
CKA\_TRUST\_CODE\_SIGNING CK\_TRUST CKT\_NSS\_MUST\_VERIFY\_TRUST

CKA\_IKUSI\_CODE\_SIGNING CK\_IKUSI CKI\_NSS\_WUSI\_VEKII I\_IK

CKA\_TRUST\_STEP\_UP\_APPROVED CK\_BBOOL CK\_FALSE

Found in path(s):

\*/opt/cola/permits/1376394069\_1659497040.3993607/0/ca-certificates-20220614-tar-bz2/ca-certificates-20220614/certdata.txt

No license file was found, but licenses were detected in source scan.

- # \* You may opt to use, copy, modify, merge, publish, distribute and/or sell
- # \* furnished to do so, under the terms of the COPYING file.

#### Found in path(s):

\*/opt/cola/permits/1376394069\_1659497040.3993607/0/ca-certificates-20220614-tar-bz2/ca-certificates-20220614/mk-ca-bundle.pl

# 1.126 packaging 21.2

# 1.126.1 Available under license:

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s)

with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.

- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

This software is made available under the terms of \*either\* of the licenses found in LICENSE.APACHE or LICENSE.BSD. Contributions to this software is made under the terms of \*both\* these licenses.

Copyright (c) Donald Stufft and individual contributors.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.127 python-certifi 2022.9.24

# 1.127.1 Available under license:

Copyright (C) 2009-2015, by Yichun "agentzh" Zhang, OpenResty Inc.

Copyright (C) 2009-2014, by Xiaozhe Wang (chaoslawful) <chaoslawful@gmail.com>.

Copyright (C) 2010-2014, by FRiCKLE Piotr Sikora <info@frickle.com>.

Copyright (C) 2015, by Shuxin Yang.

Copyright (c) 2010, 2011, Jiale "calio" Zhi <vipcalio@gmail.com>.

Copyright (C) Guanlan Dai

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2010, Marcus Clyne, Simpl (simpl.it) All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the organization (Simpl) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND

ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL MARCUS CLYNE OR SIMPL BE LIABLE FOR ANY DIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND

ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS

-----

Copyright (C) 2002-2015 Igor Sysoev Copyright (C) 2011-2015 Nginx, Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

\_\_\_\_\_

NGINX License

Copyright (C) 2002-2009 Igor Sysoev Copyright (C) 2009-2013 Sergey A. Osokin

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE

ARE DISCLAIMED. IN NO EVENT SHALL AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

\_\_\_\_\_

LuaJIT -- a Just-In-Time Compiler for Lua. http://luajit.org/

Copyright (C) 2005-2015 Mike Pall. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy

of this software and associated documentation files (the "Software"), to deal

in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in

all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM

OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN

THE SOFTWARE.

[ MIT license: http://www.opensource.org/licenses/mit-license.php
Lua License

Copyright (C) 1994-2012 Lua.org, PUC-Rio.

Permission is hereby granted, free of charge, to any person obtaining a copy

of this software and associated documentation files (the "Software"), to deal

in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in

all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR

IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM.

OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN

THI	FC	OE	TXX/	ΛT	PE
1 111	-	vr	1 00	Ar	<b>С</b> Г.

\_\_\_\_\_

Lua-cjson License

Copyright (c) 2010-2012 Mark Pulford <mark@kyne.com.au>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE

\_\_\_\_\_

#### SHA-1 implementation in NDK

Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com) All rights reserved.

This package is an SSL implementation written by Eric Young (eay@cryptsoft.com).

The implementation was written so as to conform with Netscapes SSL.

This library is free for commercial and non-commercial use as long as the following conditions are aheared to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed.

If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used.

This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. All advertising materials mentioning features or use of this software must display the following acknowledgement:

"This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)"

The word 'cryptographic' can be left out if the rouines from the library being used are not cryptographic related :-).

4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE

IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The licence and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence

OpenSSL

Copyright (c) 1998-2016 The OpenSSL Project. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. All advertising materials mentioning features or use of this software must display the following acknowledgment:

  "This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
- 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to endorse or promote products derived from this software without prior written permission. For written permission, please contact openssl-core@openssl.org.
- 5. Products derived from this software may not be called "OpenSSL" nor may "OpenSSL" appear in their names without prior written permission of the OpenSSL Project.

6. Redistributions of any form whatsoever must retain the following acknowledgment:

"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)"

THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT "AS IS" AND ANY EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com) All rights reserved.

This package is an SSL implementation written by Eric Young (eay@cryptsoft.com).

The implementation was written so as to conform with Netscapes SSL.

This library is free for commercial and non-commercial use as long as the following conditions are aheared to. The following conditions apply to all code found in this distribution, be it the RC4, RSA, lhash, DES, etc., code; not just the SSL code. The SSL documentation included with this distribution is covered by the same copyright terms except that the holder is Tim Hudson (tjh@cryptsoft.com).

Copyright remains Eric Young's, and as such any Copyright notices in the code are not to be removed.

If this package is used in a product, Eric Young should be given attribution as the author of the parts of the library used.

This can be in the form of a textual message at program startup or in documentation (online or textual) provided with the package.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

1. Redistributions of source code must retain the copyright

notice, this list of conditions and the following disclaimer.

- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. All advertising materials mentioning features or use of this software must display the following acknowledgement:

"This product includes cryptographic software written by Eric Young (eay@cryptsoft.com)"

The word 'cryptographic' can be left out if the rouines from the library being used are not cryptographic related :-).

4. If you include any Windows specific code (or a derivative thereof) from the apps directory (application code) you must include an acknowledgement: "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The licence and distribution terms for any publically available version or derivative of this code cannot be changed. i.e. this code cannot simply be copied and put under another distribution licence [including the GNU Public Licence.]

-----

# PCRE LICENCE

-----

PCRE is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Release 8 of PCRE is distributed under the terms of the "BSD" licence, as specified below. The documentation for PCRE, supplied in the "doc" directory, is distributed under the same terms as the software itself. The data in the testdata directory is not copyrighted and is in the public domain.

The basic library functions are written in C and are freestanding. Also

included in the distribution is a set of C++ wrapper functions, and a just-in-time compiler that can be used to optimize pattern matching. These are both optional features that can be omitted when the library is built.

#### THE BASIC LIBRARY FUNCTIONS

\_\_\_\_\_

Written by: Philip Hazel Email local part: ph10 Email domain: cam.ac.uk

University of Cambridge Computing Service, Cambridge, England.

Copyright (c) 1997-2017 University of Cambridge All rights reserved.

#### PCRE JUST-IN-TIME COMPILATION SUPPORT

\_\_\_\_\_

Written by: Zoltan Herczeg Email local part: hzmester Emain domain: freemail.hu

Copyright(c) 2010-2017 Zoltan Herczeg All rights reserved.

#### STACK-LESS JUST-IN-TIME COMPILER

-----

Written by: Zoltan Herczeg Email local part: hzmester Emain domain: freemail.hu

Copyright(c) 2009-2017 Zoltan Herczeg All rights reserved.

THE C++ WRAPPER FUNCTIONS

-----

Contributed by: Google Inc.

Copyright (c) 2007-2012, Google Inc.

All rights reserved.

#### THE "BSD" LICENCE

-----

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the University of Cambridge nor the name of Google Inc. nor the names of their contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

\_\_\_\_\_

zlib

(C) 1995-2013 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied warranty. In no event will the authors be held liable for any damages arising from the use of this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not claim that you wrote the original software. If you use this software

- in a product, an acknowledgment in the product documentation would be appreciated but is not required.
- 2. Altered source versions must be plainly marked as such, and must not be misrepresented as being the original software.
- 3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly Mark Adler

jloup@gzip.org madler@alumni.caltech.edu

If you use the zlib library in a product, we would appreciate \*not\* receiving lengthy legal documents to sign. The sources are provided for free but without warranty of any kind. The library has been entirely written by Jean-loup Gailly and Mark Adler; it does not include third-party code.

If you redistribute modified sources, we would appreciate that you include in the file ChangeLog history information documenting your changes. Please read the FAQ for more information on the distribution of modified source versions. Copyright (c) 2010-2012 Mark Pulford <mark@kyne.com.au>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

This package contains a modified version of ca-bundle.crt:

ca-bundle.crt -- Bundle of CA Root Certificates

Certificate data from Mozilla as of: Thu Nov 3 19:04:19 2011#

This is a bundle of X.509 certificates of public Certificate Authorities

(CA). These were automatically extracted from Mozilla's root certificates
file (certdata.txt). This file can be found in the mozilla source tree:

https://hg.mozilla.org/mozilla-central/file/tip/security/nss/lib/ckfw/builtins/certdata.txt

It contains the certificates in PEM format and therefore
can be directly used with curl / libcurl / php\_curl, or with

an Apache+mod\_ssl webserver for SSL client authentication. Just configure this file as the SSLCACertificateFile.#

#### \*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at http://mozilla.org/MPL/2.0/.

#### \*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

@(#) \$RCSfile: certdata.txt,v \$ \$Revision: 1.80 \$ \$Date: 2011/11/03 15:11:58 \$

- \* Copyright (C) 2002-2021 Igor Sysoev
- \* Copyright (C) 2011-2021 Nginx, Inc.
- \* All rights reserved.

\*

- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \* 1. Redistributions of source code must retain the above copyright
- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.

\*

- \* THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS" AND
- \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- \* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
- \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- \* SUCH DAMAGE.

\*/

MIT License

Copyright (c) 2019 TAHRI Ahmed R.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all

copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2010-2018, Marcus Clyne

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2013 Amazon.com, Inc. or its affiliates. All Rights Reserved

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_\_

LuaJIT -- a Just-In-Time Compiler for Lua. https://luajit.org/

Copyright (C) 2005-2022 Mike Pall. All rights reserved.

Copyright (C) 2017-2018 Yichun Zhang. All rights reserved.

Copyright (C) 2017-2018 OpenResty Inc. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

[ MIT license: https://www.opensource.org/licenses/mit-license.php ]

\_\_\_\_\_

[ LuaJIT includes code from Lua 5.1/5.2, which has this license statement: ]

Copyright (C) 1994-2012 Lua.org, PUC-Rio.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\_\_\_\_\_\_

[ LuaJIT includes code from dlmalloc, which has this license statement: ]

This is a version (aka dlmalloc) of malloc/free/realloc written by Doug Lea and released to the public domain, as explained at https://creativecommons.org/licenses/publicdomain

\_\_\_\_\_\_\_

Copyright (c) 2010 Jonathan Hartley All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holders, nor those of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Apache License

## Version 2.0, January 2004 http://www.apache.org/licenses/

#### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices

- (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
- (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS,

WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

Copyright (c) 2016, Cisco Systems, Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES

(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

//curl

#### COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2015, Daniel Stenberg, <daniel@haxx.se>.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

//http-parser

Copyright 2009,2010 Ryan Dahl <ry@tinyclouds.org>

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

s3transfer

Copyright 2016 Amazon.com, Inc. or its affiliates. All Rights Reserved.

The "Artistic License"

#### Preamble

The intent of this document is to state the conditions under which a Package may be copied, such that the Copyright Holder maintains some semblance of artistic control over the development of the package, while giving the users of the package the right to use and distribute the Package in a more-or-less customary fashion, plus the right to make reasonable modifications.

#### Definitions:

"Package" refers to the collection of files distributed by the Copyright Holder, and derivatives of that collection of files created through textual modification.

"Standard Version" refers to such a Package if it has not been modified, or has been modified in accordance with the wishes of the Copyright Holder as specified below.

"Copyright Holder" is whoever is named in the copyright or copyrights for the package.

"You" is you, if you're thinking about copying or distributing this Package.

"Reasonable copying fee" is whatever you can justify on the basis of media cost, duplication charges, time of people involved, and so on. (You will not be required to justify it to the Copyright Holder, but only to the computing community at large as a market that must bear the fee.)

"Freely Available" means that no fee is charged for the item itself, though there may be fees involved in handling the item. It also means that recipients of the item may redistribute it under the same conditions they received it.

- 1. You may make and give away verbatim copies of the source form of the Standard Version of this Package without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.
- 2. You may apply bug fixes, portability fixes and other modifications derived from the Public Domain or from the Copyright Holder. A Package modified in such a way shall still be considered the Standard Version.
- 3. You may otherwise modify your copy of this Package in any way, provided that you insert a prominent notice in each changed file stating how and when you changed that file, and provided that you do at least ONE of the following:
  - a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or placing the modifications on a major archive site such as unnet.uu.net, or by allowing the Copyright Holder to include your modifications in the Standard Version of the Package.
  - b) use the modified Package only within your corporation or organization.
  - c) rename any non-standard executables so the names do not conflict with standard executables, which must also be provided, and provide a separate manual page for each non-standard executable that clearly documents how it differs from the Standard Version.
  - d) make other distribution arrangements with the Copyright Holder.
- 4. You may distribute the programs of this Package in object code or executable form, provided that you do at least ONE of the following:
  - a) distribute a Standard Version of the executables and library files, together with instructions (in the manual page or equivalent) on where to get the Standard Version.
  - b) accompany the distribution with the machine-readable source of the Package with your modifications.
  - c) give non-standard executables non-standard names, and clearly document the differences in manual pages (or equivalent), together with instructions on where to get the Standard Version.
  - d) make other distribution arrangements with the Copyright Holder.
- 5. You may charge a reasonable copying fee for any distribution of this Package. You may charge any fee you choose for support of this Package. You may not charge a fee for this Package itself. However, you may distribute this Package in aggregate with other (possibly

commercial) programs as part of a larger (possibly commercial) software distribution provided that you do not advertise this Package as a product of your own. You may embed this Package's interpreter within an executable of yours (by linking); this shall be construed as a mere form of aggregation, provided that the complete Standard Version of the interpreter is so embedded.

- 6. The scripts and library files supplied as input to or produced as output from the programs of this Package do not automatically fall under the copyright of this Package, but belong to whoever generated them, and may be sold commercially, and may be aggregated with this Package. If such scripts or library files are aggregated with this Package via the so-called "undump" or "unexec" methods of producing a binary executable image, then distribution of such an image shall neither be construed as a distribution of this Package nor shall it fall under the restrictions of Paragraphs 3 and 4, provided that you do not represent such an executable image as a Standard Version of this Package.
- 7. C subroutines (or comparably compiled subroutines in other languages) supplied by you and linked into this Package in order to emulate subroutines and variables of the language defined by this Package shall not be considered part of this Package, but are the equivalent of input as in Paragraph 6, provided these subroutines do not change the language in any way that would cause it to fail the regression tests for the language.
- 8. Aggregation of this Package with a commercial distribution is always permitted provided that the use of this Package is embedded; that is, when no overt attempt is made to make this Package's interfaces visible to the end user of the commercial distribution. Such use shall not be construed as a distribution of this Package.
- 9. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.
- 10. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTIBILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End
Apache License

Version 2.0, January 2004 http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to

communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

#### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "{}" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright {yyyy} {name of copyright owner}

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.

See the License for the specific language governing permissions and limitations under the License.

Copyright (c) 2010, FRiCKLE Piotr Sikora <info@frickle.com>
Copyright (c) 2009-2010, Xiaozhe Wang <chaoslawful@gmail.com>
Copyright (c) 2009-2010, Yichun Zhang <agentzh@gmail.com>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# LICENSE ISSUES

The OpenSSL toolkit stays under a double license, i.e. both the conditions of the OpenSSL License and the original SSLeay license apply to the toolkit. See below for the actual license texts.

#### OpenSSL License

-----

\*

- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:

\*

- \* 1. Redistributions of source code must retain the above copyright
- \* notice, this list of conditions and the following disclaimer.

\*

<sup>\*</sup> Copyright (c) 1998-2019 The OpenSSL Project. All rights reserved.

```
* 2. Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in
  the documentation and/or other materials provided with the
   distribution.
* 3. All advertising materials mentioning features or use of this
  software must display the following acknowledgment:
 "This product includes software developed by the OpenSSL Project
* for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
* 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
   endorse or promote products derived from this software without
   prior written permission. For written permission, please contact
   openssl-core@openssl.org.
* 5. Products derived from this software may not be called "OpenSSL"
  nor may "OpenSSL" appear in their names without prior written
   permission of the OpenSSL Project.
* 6. Redistributions of any form whatsoever must retain the following
  acknowledgment:
* "This product includes software developed by the OpenSSL Project
  for use in the OpenSSL Toolkit (http://www.openssl.org/)"
* THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS" AND ANY
* EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
* PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE OpenSSL PROJECT OR
* ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
* SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
* NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
* LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
* STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
* OF THE POSSIBILITY OF SUCH DAMAGE.
* This product includes cryptographic software written by Eric Young
* (eay@cryptsoft.com). This product includes software written by Tim
* Hudson (tjh@cryptsoft.com).
*/
Original SSLeay License
```

/\* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)

```
* All rights reserved.
```

\*

- \* This package is an SSL implementation written
- \* by Eric Young (eay@cryptsoft.com).
- \* The implementation was written so as to conform with Netscapes SSL.

\*

- \* This library is free for commercial and non-commercial use as long as
- \* the following conditions are aheared to. The following conditions
- \* apply to all code found in this distribution, be it the RC4, RSA,
- \* lhash, DES, etc., code; not just the SSL code. The SSL documentation
- \* included with this distribution is covered by the same copyright terms
- \* except that the holder is Tim Hudson (tjh@cryptsoft.com).

\*

- \* Copyright remains Eric Young's, and as such any Copyright notices in
- \* the code are not to be removed.
- \* If this package is used in a product, Eric Young should be given attribution
- \* as the author of the parts of the library used.
- \* This can be in the form of a textual message at program startup or
- \* in documentation (online or textual) provided with the package.

\*

- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \* 1. Redistributions of source code must retain the copyright
- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.
- \* 3. All advertising materials mentioning features or use of this software
- \* must display the following acknowledgement:
- \* "This product includes cryptographic software written by
- \* Eric Young (eay@cryptsoft.com)"
- \* The word 'cryptographic' can be left out if the rouines from the library
- \* being used are not cryptographic related :-).
- \* 4. If you include any Windows specific code (or a derivative thereof) from
- \* the apps directory (application code) you must include an acknowledgement:
- \* "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"

\*

- \* THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS" AND
- st ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- st ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
- \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF

#### \* SUCH DAMAGE.

\*

- \* The licence and distribution terms for any publically available version or
- \* derivative of this code cannot be changed. i.e. this code cannot simply be
- \* copied and put under another distribution licence
- \* [including the GNU Public Licence.]

\*/

\_\_\_\_\_

# Copying Docutils

\_\_\_\_\_

:Author: David Goodger

:Contact: goodger@python.org

:Date: \$Date: 2015-05-08 17:56:32 +0200 (Fr, 08. Mai 2015) \$

:Web site: http://docutils.sourceforge.net/

:Copyright: This document has been placed in the public domain.

Most of the files included in this project have been placed in the public domain, and therefore have no license requirements and no restrictions on copying or usage; see the `Public Domain Dedication`\_ below. There are a few exceptions\_, listed below. Files in the Sandbox\_ are not distributed with Docutils releases and may have different license terms.

#### **Public Domain Dedication**

\_\_\_\_\_

The persons who have associated their work with this project (the "Dedicator": David Goodger and the many contributors to the Docutils project) hereby dedicate the entire copyright, less the exceptions\_listed below, in the work of authorship known as "Docutils" identified below (the "Work") to the public domain.

The primary repository for the Work is the Internet World Wide Web site <a href="http://docutils.sourceforge.net/">http://docutils.sourceforge.net/</a>. The Work consists of the files within the "docutils" module of the Docutils project Subversion repository (Internet host docutils.svn.sourceforge.net, filesystem path /svnroot/docutils), whose Internet web interface is located at <a href="http://docutils.svn.sourceforge.net/viewvc/docutils/">http://docutils.svn.sourceforge.net/viewvc/docutils/</a>. Files dedicated to the public domain may be identified by the inclusion, near the beginning of each file, of a declaration of the form::

Copyright: This document/module/DTD/stylesheet/file/etc. has been placed in the public domain.

Dedicator makes this dedication for the benefit of the public at large and to the detriment of Dedicator's heirs and successors. Dedicator intends this dedication to be an overt act of relinquishment in perpetuity of all present and future rights under copyright law, whether vested or contingent, in the Work. Dedicator understands that such relinquishment of all rights includes the relinquishment of all rights to enforce (by lawsuit or otherwise) those copyrights in the Work.

Dedicator recognizes that, once placed in the public domain, the Work may be freely reproduced, distributed, transmitted, used, modified, built upon, or otherwise exploited by anyone for any purpose, commercial or non-commercial, and in any way, including by methods that have not yet been invented or conceived.

(This dedication is derived from the text of the `Creative Commons Public Domain Dedication`. [#]\_)

.. [#] Creative Commons has `retired this legal tool`\_\_ and does not recommend that it be applied to works: This tool is based on United States law and may not be applicable outside the US. For dedicating new works to the public domain, Creative Commons recommend the replacement Public Domain Dedication CCO\_ (CC zero, "No Rights Reserved"). So does the Free Software Foundation in its license-list\_.

\_\_ http://creativecommons.org/retiredlicenses .. \_CC0: http://creativecommons.org/about/cc0

#### **Exceptions**

=======

The exceptions to the 'Public Domain Dedication'\_ above are:

\* docutils/writers/s5\_html/themes/default/iepngfix.htc:

IE5.5+ PNG Alpha Fix v1.0 by Angus Turnbull <a href="http://www.twinhelix.com">http://www.twinhelix.com</a>. Free usage permitted as long as this notice remains intact.

\* docutils/utils/math/\_\_init\_\_.py, docutils/utils/math/latex2mathml.py, docutils/writers/xetex/\_\_init\_\_.py, docutils/writers/latex2e/docutils-05-compat.sty, docs/user/docutils-05-compat.sty.txt, docutils/utils/error\_reporting.py, docutils/test/transforms/test\_smartquotes.py:

Copyright Gnter Milde.

Released under the terms of the `2-Clause BSD license`\_

 $(`local\ copy < licenses/BSD-2-Clause.txt>`\__).$ 

\* docutils/utils/smartquotes.py Copyright 2011 Gnter Milde, based on `SmartyPants`\_ 2003 John Gruber (released under a 3-Clause BSD license included in the file) and smartypants.py 2004, 2007 Chad Miller. Released under the terms of the `2-Clause BSD license`\_ (`local copy <licenses/BSD-2-Clause.txt>`\_\_). .. \_SmartyPants: http://daringfireball.net/projects/smartypants/ \* docutils/utils/math/math2html.py, docutils/writers/html4css1/math.css Copyright Alex Fernndez These files are part of eLyXer\_, released under the `GNU General Public License' version 3 or later. The author relicensed them for Docutils under the terms of the `2-Clause BSD license`\_ (`local copy <licenses/BSD-2-Clause.txt>`\_\_). .. \_eLyXer: http://www.nongnu.org/elyxer/ \* docutils/utils/roman.py, copyright by Mark Pilgrim, released under the `Python 2.1.1 license`\_ (`local copy`\_\_). \_\_ licenses/python-2-1-1.txt \* tools/editors/emacs/rst.el, copyright by Free Software Foundation, Inc., released under the `GNU General Public License`\_ version 3 or later ('local copy'\_\_). \_\_ licenses/gpl-3-0.txt The `2-Clause BSD license`\_ and the Python licenses are OSI-approved\_ and GPL-compatible\_. Plaintext versions of all the linked-to licenses are provided in the licenses\_directory. .. \_sandbox: http://docutils.sourceforge.net/sandbox/README.html .. \_licenses: licenses/ .. \_Python 2.1.1 license: http://www.python.org/2.1.1/license.html .. \_GNU General Public License: http://www.gnu.org/copyleft/gpl.html .. \_2-Clause BSD license: http://www.spdx.org/licenses/BSD-2-Clause .. \_OSI-approved: http://opensource.org/licenses/ .. \_license-list:

.. \_GPL-compatible: http://www.gnu.org/licenses/license-list.html

### GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc. 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original

authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

- 2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
  - a) You must cause the modified files to carry prominent notices

stating that you changed the files and the date of any change.

- b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

- 3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
  - a) Accompany it with the complete corresponding machine-readable
     source code, which must be distributed under the terms of Sections
     1 and 2 above on a medium customarily used for software interchange; or,
  - b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your

cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

- 4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to

these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

- 8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to

address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

### **NO WARRANTY**

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

### END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) 19yy name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989 Ty Coon, President of Vice

This General Public License does not permit incorporating your program into

proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

Copyright (c) 2010, Marcus Clyne, Simpl (simpl.it)

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the organization (Simpl) nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL MARCUS CLYNE OR SIMPL BE LIABLE FOR ANY DIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Copyright (C) 2015 Cybozu.

Copyright (C) 2013 Cybozu.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT

LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2017-2021 Ingy dt Net Copyright (c) 2006-2016 Kirill Simonov

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2012-2020 Amazon.com, Inc. or its affiliates. All Rights Reserved.

Licensed under the Apache License, Version 2.0 (the "License"). You may not use this file except in compliance with the License. A copy of the License is located at

http://aws.amazon.com/apache2.0/

or in the "license" file accompanying this file. This file is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Copyright 2017- Paul Ganssle <paul@ganssle.io>
Copyright 2017- dateutil contributors (see AUTHORS file)

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and

limitations under the License.

The above license applies to all contributions after 2017-12-01, as well as all contributions that have been re-licensed (see AUTHORS file for the list of contributors who have re-licensed their code).

\_\_\_\_\_

dateutil - Extensions to the standard Python datetime module.

Copyright (c) 2003-2011 - Gustavo Niemeyer <gustavo@niemeyer.net>

Copyright (c) 2012-2014 - Tomi Pievilinen <tomi.pievilainen@iki.fi>

Copyright (c) 2014-2016 - Yaron de Leeuw <me@jarondl.net>

Copyright (c) 2015- - Paul Ganssle <paul@ganssle.io>

Copyright (c) 2015- - dateutil contributors (see AUTHORS file)

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

The above BSD License Applies to all code, even that also covered by Apache 2.0. Copyright (C) 2009-2014, Yichun "agentzh" Zhang <agentzh@gmail.com>. All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Copyright (c) 2010, FRICKLE Piotr Sikora <info@frickle.com>
All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Botocore

Copyright 2012-2022 Amazon.com, Inc. or its affiliates. All Rights Reserved.

----

Botocore includes vendorized parts of the requests python library for backwards compatibility.

\_\_\_\_\_

Copyright 2013 Kenneth Reitz

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

Botocore includes vendorized parts of the urllib3 library for backwards compatibility.

Urllib3 License

===========

This is the MIT license: http://www.opensource.org/licenses/mit-license.php

Copyright 2008-2011 Andrey Petrov and contributors (see CONTRIBUTORS.txt), Modifications copyright 2012 Kenneth Reitz.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR

PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE

FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR

OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER

DEALINGS IN THE SOFTWARE.

**Bundle of CA Root Certificates** 

### \*\*\*\*\* BEGIN LICENSE BLOCK \*\*\*\*\*

This Source Code Form is subject to the terms of the Mozilla Public License, v. 2.0. If a copy of the MPL was not distributed with this file, You can obtain one at http://mozilla.org/MPL/2.0/.

\*\*\*\*\* END LICENSE BLOCK \*\*\*\*\*

MIT License

Copyright (c) 2008-2020 Andrey Petrov and contributors (see CONTRIBUTORS.txt)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright 2011 Sybren A. Stvel <sybren@stuvel.eu>

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

https://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

The MIT License (MIT)

Copyright (c) 2016 Thibault Charbonnier

Permission is hereby granted, free of charge, to any person obtaining a copy

of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

/\*

- \* Copyright (C) 2002-2009 Igor Sysoev
- \* Copyright (C) 2009-2018 Sergey A. Osokin

\*

- \* Redistribution and use in source and binary forms, with or without
- \* modification, are permitted provided that the following conditions
- \* are met:
- \* 1. Redistributions of source code must retain the above copyright
- \* notice, this list of conditions and the following disclaimer.
- \* 2. Redistributions in binary form must reproduce the above copyright
- \* notice, this list of conditions and the following disclaimer in the
- \* documentation and/or other materials provided with the distribution.

\*

- \* THIS SOFTWARE IS PROVIDED BY AUTHOR AND CONTRIBUTORS ``AS IS" AND
- \* ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
- \* IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- \* ARE DISCLAIMED. IN NO EVENT SHALL AUTHOR OR CONTRIBUTORS BE LIABLE
- \* FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
- \* DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
- \* OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
- \* HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
- \* LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
- \* OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
- \* SUCH DAMAGE.

\*/

Copyright 2007-2014 Kepler Project.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is

furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2016, Cisco Systems, Inc.

All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- 2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Parson (http://kgabis.github.com/parson/) Copyright (c) 2012 - 2016 Krzysztof Gabis

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights

to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

\*/

[The MIT License (MIT)](http://opensource.org/licenses/mit-license.php)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Copyright (c) 2008-present The pip developers (see AUTHORS.txt file)

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to

the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or

Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work

- or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work

- by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.

  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

Apache License Version 2.0, January 2004 http://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

#### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

- 2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of, publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works

that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and

(d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions. Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A

PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.

- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

### END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following boilerplate notice, with the fields enclosed by brackets "[]" replaced with your own identifying information. (Don't include the brackets!) The text should be enclosed in the appropriate comment syntax for the file format. We also recommend that a file or class name and description of purpose be included on the same "printed page" as the copyright notice for easier identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at

http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

# 1.128 pysftp 0.2.9

## 1.128.1 Available under license:

Copyright (c) 2014, Dundee Media & Technology, Inc All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- \* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- \* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- \* Neither the name of the Dundee Media & Technology, Inc nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.129 libsodium 1.5.0

## 1.129.1 Available under license:

/\*

\* ISC License

\*

- \* Copyright (c) 2013-2022
- \* Frank Denis <j at pureftpd dot org>

\*

- \* Permission to use, copy, modify, and/or distribute this software for any
- \* purpose with or without fee is hereby granted, provided that the above

\* copyright notice and this permission notice appear in all copies.

\*

- \* THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES
- \* WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF
- \* MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR
- \* ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
- \* WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
- \* ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF
- \* OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

\*/

# 1.130 idna 14.0.0

## 1.130.1 Available under license:

**BSD 3-Clause License** 

Copyright (c) 2013-2021, Kim Davies All rights reserved.

Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:

- 1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
- Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
- 3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

# 1.131 zlib 1.2.12-r3

# 1.131.1 Available under license:

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization obtaining a copy of the software and accompanying documentation covered by this license (the "Software") to use, reproduce, display, distribute, execute, and transmit the Software, and to prepare derivative works of the Software, and to permit third-parties to whom the Software is furnished to do so, all subject to the following:

The copyright notices in the Software and this entire statement, including the above license grant, this restriction and the following disclaimer, must be included in all copies of the Software, in whole or in part, and all derivative works of the Software, unless such copies or derivative works are solely in the form of machine-executable object code generated by a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY. FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

# 1.132 openssl 3.0.5

### 1.132.1 Available under license:

This software is copyright (c) 2013 by Mark Jason Dominus <mjd@cpan.org>.

This is free software; you can redistribute it and/or modify it under the same terms as the Perl 5 programming language system itself.

Terms of the Perl programming language system itself

- a) the GNU General Public License as published by the Free Software Foundation; either version 1, or (at your option) any later version, or b) the "Artistic License"
- --- The GNU General Public License, Version 1, February 1989 ---

This software is Copyright (c) 2013 by Mark Jason Dominus <mjd@cpan.org>.

This is free software, licensed under:

The GNU General Public License, Version 1, February 1989

## GNU GENERAL PUBLIC LICENSE Version 1, February 1989

Copyright (C) 1989 Free Software Foundation, Inc. 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

#### Preamble

The license agreements of most software companies try to keep users at the mercy of those companies. By contrast, our General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. The General Public License applies to the Free Software Foundation's software and to any other program whose authors commit to using it. You can use it for your programs, too.

When we speak of free software, we are referring to freedom, not price. Specifically, the General Public License is designed to make sure that you have the freedom to give away or sell copies of free software, that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of a such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must tell them their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so

that any problems introduced by others will not reflect on the original authors' reputations.

The precise terms and conditions for copying, distribution and modification follow.

# GNU GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

- 0. This License Agreement applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any work containing the Program or a portion of it, either verbatim or with modifications. Each licensee is addressed as "you".
- 1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this General Public License and to the absence of any warranty; and give any other recipients of the Program a copy of this General Public License along with the Program. You may charge a fee for the physical act of transferring a copy.
- 2. You may modify your copy or copies of the Program or any portion of it, and copy and distribute such modifications under the terms of Paragraph 1 above, provided that you also do the following:
- a) cause the modified files to carry prominent notices stating that you changed the files and the date of any change; and
- b) cause the whole of any work that you distribute or publish, that in whole or in part contains the Program or any part thereof, either with or without modifications, to be licensed at no charge to all third parties under the terms of this General Public License (except that you may choose to grant warranty protection to some or all third parties, at your option).
- c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the simplest and most usual way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this General Public License.

d) You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

Mere aggregation of another independent work with the Program (or its derivative) on a volume of a storage or distribution medium does not bring the other work under the scope of these terms.

- 3. You may copy and distribute the Program (or a portion or derivative of it, under Paragraph 2) in object code or executable form under the terms of Paragraphs 1 and 2 above provided that you also do one of the following:
  - a) accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Paragraphs 1 and 2 above; or,
  - b) accompany it with a written offer, valid for at least three years, to give any third party free (except for a nominal charge for the cost of distribution) a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Paragraphs 1 and 2 above; or,
  - c) accompany it with the information you received as to where the corresponding source code may be obtained. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form alone.)

Source code for a work means the preferred form of the work for making modifications to it. For an executable file, complete source code means all the source code for all modules it contains; but, as a special exception, it need not include source code for modules which are standard libraries that accompany the operating system on which the executable file runs, or for standard header files or definitions files that accompany that operating system.

- 4. You may not copy, modify, sublicense, distribute or transfer the Program except as expressly provided under this General Public License. Any attempt otherwise to copy, modify, sublicense, distribute or transfer the Program is void, and will automatically terminate your rights to use the Program under this License. However, parties who have received copies, or rights to use copies, from you under this General Public License will not have their licenses terminated so long as such parties remain in full compliance.
- 5. By copying, distributing or modifying the Program (or any work based on the Program) you indicate your acceptance of this license to do so, and all its terms and conditions.

- 6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.
- 7. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of the license which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the license, you may choose any version ever published by the Free Software Foundation.

8. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

### NO WARRANTY

9. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

10. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE

### POSSIBILITY OF SUCH DAMAGES.

### END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to humanity, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 1, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) 19xx name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'. This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your

program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program `Gnomovision' (a program to direct compilers to make passes at assemblers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989 Ty Coon, President of Vice

That's all there is to it!

--- The Artistic License 1.0 ---

This software is Copyright (c) 2013 by Mark Jason Dominus <mjd@cpan.org>.

This is free software, licensed under:

The Artistic License 1.0

The Artistic License

### Preamble

The intent of this document is to state the conditions under which a Package may be copied, such that the Copyright Holder maintains some semblance of artistic control over the development of the package, while giving the users of the package the right to use and distribute the Package in a more-or-less customary fashion, plus the right to make reasonable modifications.

### **Definitions:**

- "Package" refers to the collection of files distributed by the Copyright Holder, and derivatives of that collection of files created through textual modification.
- "Standard Version" refers to such a Package if it has not been modified, or has been modified in accordance with the wishes of the Copyright Holder.
- "Copyright Holder" is whoever is named in the copyright or copyrights for the package.
- "You" is you, if you're thinking about copying or distributing this Package.
- "Reasonable copying fee" is whatever you can justify on the basis of media cost, duplication charges, time of people involved, and so on. (You will not be required to justify it to the Copyright Holder, but only to the

- computing community at large as a market that must bear the fee.)
- "Freely Available" means that no fee is charged for the item itself, though there may be fees involved in handling the item. It also means that recipients of the item may redistribute it under the same conditions they received it.
- 1. You may make and give away verbatim copies of the source form of the Standard Version of this Package without restriction, provided that you duplicate all of the original copyright notices and associated disclaimers.
- 2. You may apply bug fixes, portability fixes and other modifications derived from the Public Domain or from the Copyright Holder. A Package modified in such a way shall still be considered the Standard Version.
- 3. You may otherwise modify your copy of this Package in any way, provided that you insert a prominent notice in each changed file stating how and when you changed that file, and provided that you do at least ONE of the following:
- a) place your modifications in the Public Domain or otherwise make them Freely Available, such as by posting said modifications to Usenet or an equivalent medium, or placing the modifications on a major archive site such as ftp.uu.net, or by allowing the Copyright Holder to include your modifications in the Standard Version of the Package.
- b) use the modified Package only within your corporation or organization.
- c) rename any non-standard executables so the names do not conflict with standard executables, which must also be provided, and provide a separate manual page for each non-standard executable that clearly documents how it differs from the Standard Version.
- d) make other distribution arrangements with the Copyright Holder.
- 4. You may distribute the programs of this Package in object code or executable form, provided that you do at least ONE of the following:
- a) distribute a Standard Version of the executables and library files,
   together with instructions (in the manual page or equivalent) on where to get the Standard Version.
- b) accompany the distribution with the machine-readable source of the Package with your modifications.
- c) accompany any non-standard executables with their corresponding Standard Version executables, giving the non-standard executables non-standard names, and clearly documenting the differences in manual pages (or equivalent), together with instructions on where to get the Standard Version.

- d) make other distribution arrangements with the Copyright Holder.
- 5. You may charge a reasonable copying fee for any distribution of this Package. You may charge any fee you choose for support of this Package. You may not charge a fee for this Package itself. However, you may distribute this Package in aggregate with other (possibly commercial) programs as part of a larger (possibly commercial) software distribution provided that you do not advertise this Package as a product of your own.
- 6. The scripts and library files supplied as input to or produced as output from the programs of this Package do not automatically fall under the copyright of this Package, but belong to whomever generated them, and may be sold commercially, and may be aggregated with this Package.
- 7. C or perl subroutines supplied by you and linked into this Package shall not be considered part of this Package.
- 8. The name of the Copyright Holder may not be used to endorse or promote products derived from this software without specific prior written permission.
- 9. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTIBILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

Apache License
Version 2.0, January 2004
https://www.apache.org/licenses/

### TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

### 1. Definitions.

"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.

"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.

"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.

"Object" form shall mean any form resulting from mechanical transformation or translation of a Source form, including but not limited to compiled object code, generated documentation, and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or Object form, made available under the License, as indicated by a copyright notice that is included in or attached to the work (an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object form, that is based on (or derived from) the Work and for which the editorial revisions, annotations, elaborations, or other modifications represent, as a whole, an original work of authorship. For the purposes of this License, Derivative Works shall not include works that remain separable from, or merely link (or bind by name) to the interfaces of, the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including the original version of the Work and any modifications or additions to that Work or Derivative Works thereof, that is intentionally submitted to Licensor for inclusion in the Work by the copyright owner or by an individual or Legal Entity authorized to submit on behalf of the copyright owner. For the purposes of this definition, "submitted" means any form of electronic, verbal, or written communication sent to the Licensor or its representatives, including but not limited to communication on electronic mailing lists, source code control systems, and issue tracking systems that are managed by, or on behalf of, the Licensor for the purpose of discussing and improving the Work, but excluding communication that is conspicuously marked or otherwise designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity on behalf of whom a Contribution has been received by Licensor and subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable copyright license to reproduce, prepare Derivative Works of,

- publicly display, publicly perform, sublicense, and distribute the Work and such Derivative Works in Source or Object form.
- 3. Grant of Patent License. Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.
- 4. Redistribution. You may reproduce and distribute copies of the Work or Derivative Works thereof in any medium, with or without modifications, and in Source or Object form, provided that You meet the following conditions:
  - (a) You must give any other recipients of the Work or Derivative Works a copy of this License; and
  - (b) You must cause any modified files to carry prominent notices stating that You changed the files; and
  - (c) You must retain, in the Source form of any Derivative Works that You distribute, all copyright, patent, trademark, and attribution notices from the Source form of the Work, excluding those notices that do not pertain to any part of the Derivative Works; and
  - (d) If the Work includes a "NOTICE" text file as part of its distribution, then any Derivative Works that You distribute must include a readable copy of the attribution notices contained within such NOTICE file, excluding those notices that do not pertain to any part of the Derivative Works, in at least one of the following places: within a NOTICE text file distributed as part of the Derivative Works; within the Source form or documentation, if provided along with the Derivative Works; or, within a display generated by the Derivative Works, if and wherever such third-party notices normally appear. The contents of the NOTICE file are for informational purposes only and do not modify the License. You may add Your own attribution

notices within Derivative Works that You distribute, alongside or as an addendum to the NOTICE text from the Work, provided that such additional attribution notices cannot be construed as modifying the License.

You may add Your own copyright statement to Your modifications and may provide additional or different license terms and conditions for use, reproduction, or distribution of Your modifications, or for any such Derivative Works as a whole, provided Your use, reproduction, and distribution of the Work otherwise complies with the conditions stated in this License.

- 5. Submission of Contributions. Unless You explicitly state otherwise, any Contribution intentionally submitted for inclusion in the Work by You to the Licensor shall be under the terms and conditions of this License, without any additional terms or conditions.
  Notwithstanding the above, nothing herein shall supersede or modify the terms of any separate license agreement you may have executed with Licensor regarding such Contributions.
- 6. Trademarks. This License does not grant permission to use the trade names, trademarks, service marks, or product names of the Licensor, except as required for reasonable and customary use in describing the origin of the Work and reproducing the content of the NOTICE file.
- 7. Disclaimer of Warranty. Unless required by applicable law or agreed to in writing, Licensor provides the Work (and each Contributor provides its Contributions) on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied, including, without limitation, any warranties or conditions of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A PARTICULAR PURPOSE. You are solely responsible for determining the appropriateness of using or redistributing the Work and assume any risks associated with Your exercise of permissions under this License.
- 8. Limitation of Liability. In no event and under no legal theory, whether in tort (including negligence), contract, or otherwise, unless required by applicable law (such as deliberate and grossly negligent acts) or agreed to in writing, shall any Contributor be liable to You for damages, including any direct, indirect, special, incidental, or consequential damages of any character arising as a result of this License or out of the use or inability to use the Work (including but not limited to damages for loss of goodwill, work stoppage, computer failure or malfunction, or any and all other commercial damages or losses), even if such Contributor has been advised of the possibility of such damages.
- 9. Accepting Warranty or Additional Liability. While redistributing

the Work or Derivative Works thereof, You may choose to offer, and charge a fee for, acceptance of support, warranty, indemnity, or other liability obligations and/or rights consistent with this License. However, in accepting such obligations, You may act only on Your own behalf and on Your sole responsibility, not on behalf of any other Contributor, and only if You agree to indemnify, defend, and hold each Contributor harmless for any liability incurred by, or claims asserted against, such Contributor by reason of your accepting any such warranty or additional liability.

### END OF TERMS AND CONDITIONS

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

©2022 Cisco Systems, Inc. All rights reserved.