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/* zlib.h -- interface of the 'zlib' general purpose compression library version 1.2.11, January 15th, 2017

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*/

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Jean-loup Gailly Mark Adler

jloup@gzip.org madler@alumni.caltech.edu

*/

1.9 icu 56.1

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```
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7. Database Ownership
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</body>
</html>
## -*-makefile-*-
## BSD-specific setup (FreeBSD, OpenBSD, NetBSD, *BSD)
## Copyright (c) 1999-2013, International Business Machines Corporation and
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## Commands to generate dependency files
GEN DEPS.c= $(CC) -E -MM $(DEFS) $(CPPFLAGS)
GEN_DEPS.cc= $(CXX) -E -MM $(DEFS) $(CPPFLAGS)
## Flags for position independent code
SHAREDLIBCFLAGS = -fPIC
SHAREDLIBCXXFLAGS = -fPIC
SHAREDLIBCPPFLAGS = -DPIC
## Additional flags when building libraries and with threads
THREADSCPPFLAGS = -D_REENTRANT
LIBCPPFLAGS =
## Compiler switch to embed a runtime search path
LD RPATH=
LD_RPATH_PRE= -Wl,-rpath,
## Compiler switch to embed a library name
LD_SONAME = -Wl,-soname -Wl,$(notdir $(MIDDLE_SO_TARGET))
## Shared library options
LD_SOOPTIONS= -Wl,-Bsymbolic
## Shared object suffix
```

```
SO = so
## Non-shared intermediate object suffix
STATIC_O = ao
## Compilation rules
%.$(STATIC_O): $(srcdir)/%.c
$(COMPILE.c) $(STATICCPPFLAGS) $(STATICCFLAGS) -o $@ $<
%.o: $(srcdir)/%.c
$(COMPILE.c) $(DYNAMICCPPFLAGS) $(DYNAMICCFLAGS) -o $@ $<
%.$(STATIC_O): $(srcdir)/%.cpp
$(COMPILE.cc) $(STATICCPPFLAGS) $(STATICCXXFLAGS) -o $@ $<
%.o: $(srcdir)/%.cpp
$(COMPILE.cc) $(DYNAMICCPPFLAGS) $(DYNAMICCXXFLAGS) -o $@ $<
## Dependency rules
%.d: $(srcdir)/%.c
@echo "generating dependency information for $<"
@$(SHELL) -ec '$(GEN_DEPS.c) $< \
| sed '''s/($*\).o[:]*/1.o $@:/g'''>$@;
 [-s $@] || rm -f $@'
%.d: $(srcdir)/%.cpp
@echo "generating dependency information for $<"
@$(SHELL) -ec '$(GEN DEPS.cc) $< \
[-s $@] || rm -f $@'
## Versioned libraries rules
%.$(SO).$(SO_TARGET_VERSION_MAJOR): %.$(SO).$(SO_TARGET_VERSION)
(RM)  @ && ln -s {<F}  $@
%.$(SO): %.$(SO).$(SO_TARGET_VERSION_MAJOR)
$(RM) $@ && ln -s ${*F}.$(SO).$(SO_TARGET_VERSION) $@
## Bind internal references
# LDflags that pkgdata will use
BIR_LDFLAGS= -Wl,-Bsymbolic
# Dependencies [i.e. map files] for the final library
BIR_DEPS=
## Remove shared library 's'
STATIC_PREFIX_WHEN_USED =
STATIC_PREFIX =
```

1.10 sqlite 3.32.3

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1.11 direct3d 10.0.17134.12

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1.12 zlib 1.2.11

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/* zlib.h -- interface of the 'zlib' general purpose compression library version 1.2.11, January 15th, 2017

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1.13 automapper 5.2.0

1.13.1 Available under license:

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1.15 libvpx 1.7.0-1676-g9ecc0e779a

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1.16 solid-practices-composition-core 2.2.0

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1.17 system-windows-interactivity-wpf 3.0.40218.0

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1.18 pcre2 10.30

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1.19 leveldb 1.20

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1.22 qt 5.10.1

1.23 system-runtime-compilerservices-unsafe 4.0.0.0

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- # Core team:

#

- # These people were responsible for the initial implementations in Java and
- # C++, and carry out the bulk of metadata maintenance, bug fixes & feature
- # requests, and porting new features to Javascript.

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-- Offline geocoder, local Maven expert.

Cecilia Roes

-- Carrier mapper.

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-- First version of the PhoneNumberMatcher and related classes.

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Philippe Liard

-- Initial open-sourcing of a C++ library, responsible for getting this to work across multiple platforms.

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1.33 solid-core 2.2.0

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1.34 system-threading-tasks-extensions 4.6.27129.04

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1.35 solid-practices-modularity 2.2.0

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1.36 libjpeg 6b

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1.36.2 Available under license:

The Independent JPEG Group's JPEG software

README for release 6b of 27-Mar-1998

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

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

DOCUMENTATION ROADMAP

This file contains the following sections:

OVERVIEW General description of JPEG and the IJG software.

LEGAL ISSUES Copyright, lack of warranty, terms of distribution.

REFERENCES Where to learn more about JPEG.

ARCHIVE LOCATIONS Where to find newer versions of this software.

RELATED SOFTWARE Other stuff you should get.

FILE FORMAT WARS Software *not* to get.

TO DO Plans for future IJG releases.

Other documentation files in the distribution are:

User documentation:

install.doc How to configure and install the IJG software.

usage.doc Usage instructions for cjpeg, djpeg, jpegtran,

rdjpgcom, and wrjpgcom.

*.1 Unix-style man pages for programs (same info as usage.doc).

wizard.doc Advanced usage instructions for JPEG wizards only.

change.log Version-to-version change highlights.

Programmer and internal documentation:

libjpeg.doc How to use the JPEG library in your own programs.

example.c Sample code for calling the JPEG library.

structure.doc Overview of the JPEG library's internal structure.

filelist.doc Road map of IJG files.

coderules.doc Coding style rules --- please read if you contribute code.

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

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

OVERVIEW

=======

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

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

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

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability;

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

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

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

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

The IJG distribution formerly included code to read and write GIF files.

To avoid entanglement with the Unisys LZW patent, GIF reading support has

been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

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REFERENCES

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

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

A somewhat less technical, more leisurely introduction to JPEG can be found in "The Data Compression Book" by Mark Nelson and Jean-loup Gailly, published by M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides good explanations and example C code for a multitude of compression methods including JPEG. It is an excellent source if you are comfortable reading C code but don't know much about data compression in general. The book's JPEG sample code is far from industrial-strength, but when you are ready to look at a full implementation, you've got one here...

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

The JPEG standard itself is not available electronically; you must order a paper copy through ISO or ITU. (Unless you feel a need to own a certified official copy, we recommend buying the Pennebaker and Mitchell book instead;

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

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

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

Literature Department

C-Cube Microsystems, Inc.

1778 McCarthy Blvd.

Milpitas, CA 95035

phone (408) 944-6300, fax (408) 944-6314

A PostScript version of this document is available by FTP at ftp://ftp.uu.net/graphics/jpeg/jfif.ps.gz. There is also a plain text version at ftp://ftp.uu.net/graphics/jpeg/jfif.txt.gz, but it is missing the figures.

The TIFF 6.0 file format specification can be obtained by FTP from ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz. The JPEG incorporation scheme found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems. IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6). Instead, we recommend the JPEG design proposed by TIFF Technical Note #2 (Compression tag 7). Copies of this Note can be obtained from ftp.sgi.com or from ftp://ftp.uu.net/graphics/jpeg/. It is expected that the next revision of the TIFF spec will replace the 6.0 JPEG design with the Note's design. Although IJG's own code does not support TIFF/JPEG, the free libtiff library uses our library to implement TIFF/JPEG per the Note. libtiff is available from ftp://ftp.sgi.com/graphics/tiff/.

ARCHIVE LOCATIONS

The "official" archive site for this software is ftp.uu.net (Internet address 192.48.96.9). The most recent released version can always be found

there in directory graphics/jpeg. This particular version will be archived as ftp://ftp.uu.net/graphics/jpeg/jpegsrc.v6b.tar.gz. If you don't have direct Internet access, UUNET's archives are also available via UUCP; contact help@uunet.uu.net for information on retrieving files that way.

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

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

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

send usenet/news.answers/jpeg-faq/part1 send usenet/news.answers/jpeg-faq/part2

RELATED SOFTWARE

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

If you are on a Unix machine, we highly recommend Jef Poskanzer's free PBMPLUS software, which provides many useful operations on PPM-format image files. In particular, it can convert PPM images to and from a wide range of other formats, thus making cjpeg/djpeg considerably more useful. The latest version is distributed by the NetPBM group, and is available from numerous sites, notably ftp://wuarchive.wustl.edu/graphics/graphics/packages/NetPBM/. Unfortunately PBMPLUS/NETPBM is not nearly as portable as the IJG software is; you are likely to have difficulty making it work on any non-Unix machine.

A different free JPEG implementation, written by the PVRG group at Stanford, is available from ftp://havefun.stanford.edu/pub/jpeg/. This program is designed for research and experimentation rather than production use; it is slower, harder to use, and less portable than the IJG code, but it

is easier to read and modify. Also, the PVRG code supports lossless JPEG, which we do not. (On the other hand, it doesn't do progressive JPEG.)

FILE FORMAT WARS

===========

Some JPEG programs produce files that are not compatible with our library. The root of the problem is that the ISO JPEG committee failed to specify a concrete file format. Some vendors "filled in the blanks" on their own, creating proprietary formats that no one else could read. (For example, none of the early commercial JPEG implementations for the Macintosh were able to exchange compressed files.)

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

The upcoming JPEG Part 3 standard defines a file format called SPIFF. SPIFF is interoperable with JFIF, in the sense that most JFIF decoders should be able to read the most common variant of SPIFF. SPIFF has some technical advantages over JFIF, but its major claim to fame is simply that it is an official standard rather than an informal one. At this point it is unclear whether SPIFF will supersede JFIF or whether JFIF will remain the de-facto standard. IJG intends to support SPIFF once the standard is frozen, but we have not decided whether it should become our default output format or not. (In any case, our decoder will remain capable of reading JFIF indefinitely.)

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

TO DO

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

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

As always, speeding things up is of great interest.

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

1.37 angle 1.0.1

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1.38 libsrtp 1.6.0

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1.39 curl 7.39.0

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c-ares

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

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```
C++ Big Integer Library (see ChangeLog for version)
```

http://mattmccutchen.net/bigint/

Written and maintained by Matt McCutchen <matt@mattmccutchen.net>

You can use this library in a C++ program to do arithmetic on integers of size limited only by your computer's memory. The library provides BigUnsigned and BigInteger classes that represent nonnegative integers and signed integers, respectively. Most of the C++ arithmetic operators are overloaded for these classes, so big-integer calculations are as easy as:

```
#include "BigIntegerLibrary.hh"

BigInteger a = 65536;

cout << (a * a * a * a * a * a * a * a * a);

(prints 340282366920938463463374607431768211456)
```

The code in `sample.cc' demonstrates the most important features of the library. To get started quickly, read the code and explanations in that file and run it. If you want more detail or a feature not shown in `sample.cc', consult the consult the actual header and source files, which are thoroughly commented.

This library emphasizes ease of use and clarity of implementation over speed; some users will prefer GMP (http://swox.com/gmp/), which is faster. The code is intended to be reasonably portable across computers and modern C++ compilers; in particular, it uses whatever word size the computer provides (32-bit, 64-bit, or otherwise).

Compiling programs that use the library

The library consists of a folder full of C++ header files (`.hh') and source files (`.cc'). Your own programs should `#include' the necessary header files and link with the source files. A makefile that builds the sample program (`sample.cc') is included; you can adapt it to replace the sample with your own program.

Alternatively, you can use your own build system or IDE. In that case, you must put the library header files where the compiler will find them and arrange to have your program linked with the library source files; otherwise, you will get errors about missing header files or "undefined references". To learn how to do this, consult the documentation for the build system or IDE; don't bother asking me. Adding all the library files to your project will work in many IDEs but may not be the most desirable approach.

Resources

The library's Web site (above) provides links to released versions, the current development version, and a mailing list for release announcements, questions, bug reports, and other discussion of the library. I would be delighted to hear from you if you like this library and/or find a good use for it.

Bugs and enhancements

The library has been tested by me and others but is by no means bug-free. If you find a bug, please report it, whether it comes in the form of compiling trouble, a mathematically inaccurate result, or a memory-management blooper (since I use Java, these are altogether too common in my C++). I generally fix all reported bugs. You are also welcome to request enhancements, but I am unlikely to do substantial amounts of work on enhancements at this point.

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~~~~

## 1.47 tidy 5.7.24

### 1.47.1 Available under license:

# HTML Tidy

## HTML parser and pretty printer

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## 1.49 sql-cipher 4.0.1

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## 1.50 libflac 1.3.1

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/></a>
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<div class="navbar">
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 <a href="faq.html">faq</a>&nbsp;&nbsp;|
 <a href="documentation.html">documentation</a>&nbsp;&nbsp;
 <a href="developers.html">developers</a>&nbsp;&nbsp;|
 <a href="changelog.html">changelog</a>&nbsp;&nbsp;|
 <a href="http://xiph.org/flac">more</a>
</div>
<div class="below nav"></div>
<div class="box">
<div class="box title">
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```

</div>
</body>
</html>

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#### DOCUMENTATION ROADMAP

\_\_\_\_\_

This file contains the following sections:

OVERVIEW General description of JPEG and the IJG software.

LEGAL ISSUES Copyright, lack of warranty, terms of distribution.

REFERENCES Where to learn more about JPEG.

ARCHIVE LOCATIONS Where to find newer versions of this software.

ACKNOWLEDGMENTS Special thanks.

FILE FORMAT WARS Software \*not\* to get.

TO DO Plans for future IJG releases.

Other documentation files in the distribution are:

#### User documentation:

install.txt How to configure and install the IJG software.

usage.txt Usage instructions for cjpeg, djpeg, jpegtran,

rdjpgcom, and wrjpgcom.

\*.1 Unix-style man pages for programs (same info as usage.txt).

wizard.txt Advanced usage instructions for JPEG wizards only.

change.log Version-to-version change highlights.

Programmer and internal documentation:

libjpeg.txt How to use the JPEG library in your own programs.

example.c Sample code for calling the JPEG library.

structure.txt Overview of the JPEG library's internal structure.

filelist.txt Road map of IJG files.

coderules.txt Coding style rules --- please read if you contribute code.

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

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

#### **OVERVIEW**

=======

This package contains C software to implement JPEG image encoding, decoding, and transcoding. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and grayscale images.

This software implements JPEG baseline, extended-sequential, and progressive compression processes. Provision is made for supporting all variants of these processes, although some uncommon parameter settings aren't implemented yet. We have made no provision for supporting the hierarchical or lossless processes defined in the standard.

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

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application.

We have also included "jpegtran", a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files.

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

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The IJG distribution formerly included code to read and write GIF files.

To avoid entanglement with the Unisys LZW patent (now expired), GIF reading support has been removed altogether, and the GIF writer has been simplified to produce "uncompressed GIFs". This technique does not use the LZW algorithm; the resulting GIF files are larger than usual, but are readable by all standard GIF decoders.

#### REFERENCES

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

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

A somewhat less technical, more leisurely introduction to JPEG can be found in "The Data Compression Book" by Mark Nelson and Jean-loup Gailly, published by M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides good explanations and example C code for a multitude of compression methods including JPEG. It is an excellent source if you are comfortable reading C code but don't know much about data compression in general. The book's JPEG sample code is far from industrial-strength, but when you are ready to look at a full implementation, you've got one here...

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

Although this is by far the most detailed and comprehensive exposition of JPEG publicly available, we point out that it is still missing an explanation of the most essential properties and algorithms of the underlying DCT technology.

If you think that you know about DCT-based JPEG after reading this book, then you are in delusion. The real fundamentals and corresponding potential of DCT-based JPEG are not publicly known so far, and that is the reason for all the mistaken developments taking place in the image coding domain.

The original JPEG standard is divided into two parts, Part 1 being the actual specification, while Part 2 covers compliance testing methods. Part 1 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS 10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of Continuous-tone Still Images, Part 2: Compliance testing" and has document numbers ISO/IEC IS 10918-2, ITU-T T.83.

IJG JPEG 8 introduced an implementation of the JPEG SmartScale extension which is specified in two documents: A contributed document at ITU and ISO with title "ITU-T JPEG-Plus Proposal for Extending ITU-T T.81 for Advanced Image Coding", April 2006, Geneva, Switzerland. The latest version of this document is Revision 3. And a contributed document ISO/IEC JTC1/SC29/WG1 N 5799 with title "Evolution of JPEG", June/July 2011, Berlin, Germany. IJG JPEG 9 introduces a reversible color transform for improved lossless compression which is described in a contributed document ISO/IEC JTC1/SC29/WG1 N 6080 with title "JPEG 9 Lossless Coding", June/July 2012, Paris, France.

The JPEG standard does not specify all details of an interchangeable file format. For the omitted details we follow the "JFIF" conventions, version 2. JFIF version 1 has been adopted as Recommendation ITU-T T.871 (05/2011): Information technology - Digital compression and coding of continuous-tone still images: JPEG File Interchange Format (JFIF). It is available as a free download in PDF file format from http://www.itu.int/rec/T-REC-T.871. A PDF file of the older JFIF document is available at http://www.w3.org/Graphics/JPEG/jfif3.pdf.

The TIFF 6.0 file format specification can be obtained by FTP from ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz. The JPEG incorporation scheme found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems. IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6). Instead, we recommend the JPEG design proposed by TIFF Technical Note #2 (Compression tag 7). Copies of this Note can be obtained from http://www.ijg.org/files/. It is expected that the next revision of the TIFF spec will replace the 6.0 JPEG design with the Note's design. Although IJG's own code does not support TIFF/JPEG, the free libtiff library uses our library to implement TIFF/JPEG per the Note.

#### ARCHIVE LOCATIONS

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The "official" archive site for this software is www.ijg.org.

The most recent released version can always be found there in directory "files". This particular version will be archived as http://www.ijg.org/files/jpegsrc.v9c.tar.gz, and in Windows-compatible "zip" archive format as http://www.ijg.org/files/jpegsr9c.zip.

The JPEG FAQ (Frequently Asked Questions) article is a source of some general information about JPEG.

It is available on the World Wide Web at http://www.faqs.org/faqs/jpeg-faq/ and other news.answers archive sites, including the official news.answers archive at rtfm.mit.edu: ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/. If you don't have Web or FTP access, send e-mail to mail-server@rtfm.mit.edu with body

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#### ACKNOWLEDGMENTS

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Thank to Thomas Richter and Daniel Lee for inviting me to the ISO/IEC JTC1/SC29/WG1 (previously known as JPEG, together with ITU-T SG16) meeting in Berlin, Germany.

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#### FILE FORMAT WARS

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The ISO/IEC JTC1/SC29/WG1 standards committee (previously known as JPEG, together with ITU-T SG16) currently promotes different formats containing the name "JPEG" which is misleading because these formats are incompatible with original DCT-based JPEG and are based on faulty technologies. IJG therefore does not and will not support such momentary mistakes (see REFERENCES).

There exist also distributions under the name "OpenJPEG" promoting such kind of formats which is misleading because they don't support original JPEG images.

We have no sympathy for the promotion of inferior formats. Indeed, one of the original reasons for developing this free software was to help force convergence on common, interoperable format standards for JPEG files. Don't use an incompatible file format!

(In any case, our decoder will remain capable of reading existing JPEG image files indefinitely.)

The ISO committee pretends to be "responsible for the popular JPEG" in their public reports which is not true because they don't respond to actual requirements for the maintenance of the original JPEG specification. Furthermore, the ISO committee pretends to "ensure interoperability" with their standards which is not true because their "standards" support only application-specific and proprietary use cases and contain mathematically incorrect code.

There are currently different distributions in circulation containing the name "libjpeg" which is misleading because they don't have the features and are incompatible with formats supported by actual IJG libjpeg distributions. One of those fakes is released by members of the ISO committee and just uses the name of libjpeg for misdirection of people, similar to the abuse of the name JPEG as described above, while having nothing in common with actual IJG libjpeg distributions and containing mathematically incorrect code. The other one claims to be a "derivative" or "fork" of the original libjpeg, but violates the license conditions as described under LEGAL ISSUES above and violates basic C programming properties.

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#### TO DO

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Version 9 is the second release of a new generation JPEG standard to overcome the limitations of the original JPEG specification, and is the first true source reference JPEG codec.

More features are being prepared for coming releases...

Please send bug reports, offers of help, etc. to jpeg-info@jpegclub.org.

# 1.53 openjpeg 2.3.0

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```

# 1.55 openh264 1.9.0

### 1.55.1 Available under license:

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## 1.56 lame 3.100

### 1.56.1 Available under license:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"</p>
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<a href="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
<head>
<meta name="generator" content="PSPad editor, www.pspad.com" />
<meta http-equiv="content-type" content="text/html; charset=UTF-8" />
link rel="stylesheet" type="text/css" href="styles/lame.css" />
<title>LAME MP3 Encoder :: Developers</title>
</head>
<body>
<div id="menu">
ul>
<a href="index.html">Index page</a>
<a href="about.html">About LAME</a>
<a href="introduction.html">Intro to encoding</a>
<a href="usage.html">Usage of LAME</a>
<a href="history.html">Version history</a>
<a href="contributors.html">Coders of LAME</a>
<a href="contact.html">Contact LAME</a>
<a style="border: 0" href="links.html">LAME links</a>
</div>
<div id="container">
<div id="content">
<div align="center">
<img src="images/logo.gif" width="358" height="231" alt="LAME Official Logo" />
<h2 class="hilight">LAME Developers</h2>
</div>
Note: if possible, please do not contact developers directly, but proceed as
mentioned in the <a href="contact.html">contact page</a>.
```

```
LAME was originally developed by Mike Cheng, from 1998 to 1999. After he
retired, the project started being maintained by Mark Taylor till early 2003.
After 2003, the project became managed by core developpers' teamwork, with no
official hierarchy or leadership.
>
The following list only represents some of the individuals (in alphabetical
order of family name) that contributed resources to LAME development. LAME
owes its quality and speed to contributions from many other people, including
the many people who post to the mp3encoder mailing list. See <a
href="http://lame.cvs.sourceforge.net/*checkout*/lame/lame/doc/html/history.html">
History</a> for more complete details.
Primary developers:
<a href="http://sourceforge.net/users/robert/">Robert Hegemann</a>
Tuning, optimizations, psychoacoustics...
<a href="http://sourceforge.net/users/aleidinger">Alexander Leidinger</a>
Multiplatform configuration, libraries handling, release management...
<a href="http://www.ime.usp.br/~rbrito/">Rog&eacute;rio Brito</a>
Debian packaging, debugging.
Primary developers - Retired:
<a href="http://www.mp3-tech.org">Gabriel Bouvigne</a>
Tuning, optimizations, psychoacoustics...
<a href="http://sourceforge.net/users/mikecheng/">Mike Cheng</a>
```

Maintainer of LAME v2.x.

```
<a href="http://sourceforge.net/users/pfk">Frank Klemm</a>
Psychoacoustics, optimizations.
<a href="http://sourceforge.net/users/shibatch">Naoki Shibata</a>
Psychoacoustics (NSPsytune model, NSSafeJoint).
<a href="http://sourceforge.net/users/markt">Mark Taylor</a>
Maintainer of LAME v3.x, initial implementer of GPsycho psychoacoustic
model.
<a href="http://www.initialt.org">Takehiro Tominaga</a>
Psychoacoustics, bitstream, optimizations, assembly code...
Additional developers:
<a href="http://www.rjamorim.com">Roberto Amorim</a>
Web pages and documentation.
<a href="http://sourceforge.net/users/jd-">John Dahlstrom</a>
Adaptive ATH.
<a href="http://sourceforge.net/users/potsticker">John Dee</a>
LAME extended VBR header.
<a href="http://sourceforge.net/users/domd/">Dominique Duvivier</a>
Speed optimizations.
<a href="http://sourceforge.net/users/afaber">Albert Faber</a>
Author of CDex and lame_enc.dll.
```

```
<a href="http://sourceforge.net/users/pgubanov">Peter Gubanov</a>
LAME DirectShow Filter.
<a href="http://sourceforge.net/users/glessard">Guillaume Lessard</a>
 
<a href="http://sourceforge.net/users/robux4">Steve Lhomme</a>
LAME ACM codec.
<a href="http://sourceforge.net/users/gramps">Don Melton</a>
id3v1 and v2 code.
<a href="http://sourceforge.net/users/dibrom/">Darin Morrison</a>
Presets tuning.
<a href="http://sourceforge.net/users/kylev/">Kyle VanderBeek</a>
Python bindings, website clean-up.
</div>
<div id="footer">
<a href="http://sourceforge.net/projects/lame"><img
src="http://sflogo.sourceforge.net/sflogo.php?group_id=290&type=12"
alt="Get LAME (Lame Aint an MP3 Encoder) at SourceForge.net. Fast, secure and Free Open Source software
downloads"
border="0" height="30" width="120" /></a>
<a href="http://validator.w3.org/#validate_by_upload"><img src="images/valid-xhtml10.png"
alt="Valid XHTML 1.0 Transitional" border="0" height="31" width="88" /></a>
```

```
<a href="http://jigsaw.w3.org/css-validator/"><img src="images/valid-css.png"
alt="Valid CSS!" border="0" height="31" width="88" /></a>
HTML markup and design by <a href="http://www.rjamorim.com" target="_blank">Roberto Amorim</a> and <a href="http://www.maresweb.de" target="_blank">Sebastian Mares</a>. Logo by <a href="http://www.brightercreative.co.uk">Sam Fisher</a>.
</div>
</div>
</div>
</body>
</html>
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Version 2. June 1991
```

Version 2, June 1991

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

That's all there is to it!

This package was originally made by Stefan Karrmann <S.Karrmann@gmx.net> on Thu, 31 Aug 2000 22:15:07 +0200.

The current maintainer is Rogrio Brito <rbrito@users.sf.net>.

It was downloaded from the CVS repository at <a href="http://sf.net/projects/lame">http://sf.net/projects/lame</a>.

Upstream Authors: The LAME team <a href="mailto:lame-dev@lists.sf.net">lame-dev@lists.sf.net</a>.

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# 1.57 sqlite 3.27.1

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# 1.58 solid-practices-ioc 2.2.0

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## 1.60 flutter 1.4.0

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```
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* Date: 2018-07-31

*/
import 'package:json_annotation/json_annotation.dart';

/**

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*/

part 'License.g.dart';

@JsonSerializable()
class License {
```

```
String name;
License(this.name);
factory License.fromJson(Map<String, dynamic> json) => _$LicenseFromJson(json);
Map<String, dynamic> toJson() => $LicenseToJson(this);
// GENERATED CODE - DO NOT MODIFY BY HAND
part of 'License.dart';
// ********************************
// JsonSerializableGenerator
// ********************************
License _$LicenseFromJson(Map<String, dynamic> json) {
return License(json['name'] as String);
}
Map<String, dynamic> _$LicenseToJson(License instance) =>
 <String, dynamic>{'name': instance.name};
                Apache License
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\* WPF: PresentationNative\_cor3.dll

\* WPF: wpfgfx\_cor3.dll

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The following binaries are licensed with the [Windows SDK License](https://docs.microsoft.com/legal/windows-sdk/license):

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* .NET Core: api-ms-*.*

* .NET Core: ucrtbase.dll
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# Contributions to .NET Core 2.0 Preview 2

We're still working out the best way to present contributors and trying to be as accurate as possible. The list below is generated with the following command listed below in an attempt to capture all contributions which have gone into .NET Core 2.0 Preview 2. Where multiple email addresses were returned for a single person, the counts were aggregated with the email address reported the most commits.

```
"bash git shortlog -sne --no-merges --since release/2.0.0@ {2017-05-05} --until release/2.0.0@ {2017-06-07} ...
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

- \* [CLI](#cli)
- \* [CoreCLR](#coreclr)
- \* [CoreFX](#corefx)
- \* [WCF](#wcf)

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- # Contributions to .NET Core 1.1

We're still working out the best way to present contributors and trying to be as accurate as possible. The list below is generated with the following command against each repo. The release qualifier is different from the example in some cases. Also, where multiple email addresses were returned for a single person, the counts were aggregated with the email address reported the most commits.

```
"bash git shortlog -sne --no-merges --since {2016-05-20} --until {2016-11-08}
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When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

## CLI

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## ## WCF

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The list below is generated with the following command listed below in an attempt to capture all contributions which have gone into .NET Core 2.1.

```
"bash git shortlog -sne --no-merges --since 2017-11-16 --until 2018-05-15
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

- \* [CLI](#cli)
- \* [CoreCLR](#coreclr)
- \* [CoreFX](#corefx)
- \* [WCF](#wcf)

## ## CLI

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Duplicate names are the result of folks making commits under multiple email addresses.

- [CoreCLR](#coreclr)
- [CoreFX](#corefx)
- [Core Tools](#coretools)
- [Core Docs](#coredocs)
- [WCF](#wcf)

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### ## Core Docs

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- # Contributions to .NET Core SDK 1.0

We're still working out the best way to present contributors and trying to be as accurate as possible. The list below is generated with the following command listed below in an attempt to capture all contributions which have gone into .NET Core SDK 1.0. Where multiple email addresses were returned for a single person, the counts were aggregated with the email address reported the most commits.

```
```bash git shortlog -sne --no-merges --until release/1.1.0@ {2017-02-25} ```
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

```
## .NET Core Tools (SDK)
```

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# Contributions to .NET Core 2.0

The list below is generated with the following command listed below in an attempt to capture all contributions which have gone into .NET Core 2.0.

```
"bash git shortlog -sne --no-merges --since release/2.0.0@ {2016-10-03} --until release/2.0.0@ {2017-07-25} ...
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

- \* [CLI](#cli)
- \* [CoreCLR](#coreclr)
- \* [CoreFX](#corefx)
- \* [WCF](#wcf)

- \* [Livar Cunha (311)](https://github.com/dotnet/cli/commits/release/2.0.0?author=livar@live.com)
- \* [Piotr Puszkiewicz (219)](https://github.com/dotnet/cli/commits/release/2.0.0?author=piotrp@microsoft.com)
- \* [Eric Erhardt (159)](https://github.com/dotnet/cli/commits/release/2.0.0?author=eric.erhardt@microsoft.com)
- \* [Justin Goshi (145)](https://github.com/dotnet/cli/commits/release/2.0.0?author=jgoshi@microsoft.com)
- \* [Krzysztof Wicher (103)](https://github.com/dotnet/cli/commits/release/2.0.0?author=mordotymoja@gmail.com)
- \* [Mike Lorbetske (100)](https://github.com/dotnet/cli/commits/release/2.0.0?author=mike.lorbetske@n3-p.com)
- \* [jonsequitur (77)](https://github.com/dotnet/cli/commits/release/2.0.0?author=jonsequeira@gmail.com)
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- \* [Nick Guerrera (71)](https://github.com/dotnet/cli/commits/release/2.0.0?author=nicholg@microsoft.com)
- \* [William Li (67)](https://github.com/dotnet/cli/commits/release/2.0.0?author=wul@microsoft.com)
- \* [Livar (58)](https://github.com/dotnet/cli/commits/release/2.0.0?author=licavalc@microsoft.com)
- \* [Jon Sequeira (52)](https://github.com/dotnet/cli/commits/release/2.0.0?author=jonsequeira@gmail.com)
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# Contributions to .NET Core 2.0 Preview 1

We're still working out the best way to present contributors and trying to be as accurate as possible. The list below is generated with the following command listed below in an attempt to capture all contributions which have gone into .NET Core 2.0 Preview 1. Where multiple email addresses were returned for a single person, the counts were aggregated with the email address reported the most commits.

```
""bash git shortlog -sne --no-merges --since release/2.0.0@{2016-10-03} --until release/2.0.0@{2017-05-05} --committer="dotnet-bot" --invert-grep
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

- \* [CLI](#cli)
- \* [CoreCLR](#coreclr)
- \* [CoreFX](#corefx)
- \* [WCF](#wcf)

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- \* [Carol Wang (Inspur Worldwide Services Ltd)
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# 1.68 logofx-client-mvvm-model 2.0.0

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base64.cpp and base64.h

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Ren Nyffenegger rene.nyffenegger@adp-gmbh.ch

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# L. Peter Deutsch ghost@aladdin.com

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src/base/md5.h
src/bdf/bdf.c
src/bdf/bdf.h
```

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## 1.74 protobuf 3.12.2

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\* Small patch to handle trailing slashes in --proto\_path flag.

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\* Small patch to fix Python CallMethod().

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\* Small optimizations to Python serialization.

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- \* VI syntax highlighting tweaks.
- \* Fix compiler to not make output executable.

Dilip Joseph <a href="mailto:com">dilip.antony.joseph@gmail.com</a>

\* Heuristic detection of sub-messages when printing unknown fields in text format.

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\* Added @Override annotation to generated Java code where appropriate.

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\* Tru64 support.

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\* Solaris 10 + Sun Studio fixes.

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\* Slicing support for repeated scalar fields for the Python API.

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- \* MS Visual Studio error format option.
- \* Detect unordered\_map in stl\_hash.m4.

Brian Olson <a href="mailto:springle-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/google-com/goo

\* gzip/zlib I/O support.

Michael Poole <mdpoole@troilus.org>

- \* Fixed warnings about generated constructors not explicitly initializing all fields (only present with certain compiler settings).
- \* Added generation of field number constants.

Wink Saville <wink@google.com>

\* Fixed initialization ordering problem in logging code.

Will Pierce <willp@nuclei.com>

\* Small patch improving performance of in Python serialization.

Alexandre Vassalotti <alexandre@peadrop.com>

\* Emacs mode for Protocol Buffers (editors/protobuf-mode.el).

Scott Stafford <scott.stafford@gmail.com>

\* Added Swap(), SwapElements(), and RemoveLast() to Reflection interface.

Alexander Melnikov <alm@sibmail.ru>

\* HPUX support.

Oliver Jowett <oliver.jowett@gmail.com>

- \* Detect whether zlib is new enough in configure script.
- \* Fixes for Solaris 10 32/64-bit confusion.

Evan Jones <evanj@mit.edu>

- \* Optimize Java serialization code when writing a small message to a stream.
- \* Optimize Java serialization of strings so that UTF-8 encoding happens only once per string per serialization call.
- \* Clean up some Java warnings.
- \* Fix bug with permanent callbacks that delete themselves when run.

Michael Kucharski < m.kucharski@gmail.com>

\* Added CodedInputStream.getTotalBytesRead().

Kacper Kowalik <xarthisius.kk@gmail.com>

\* Fixed m4/acx\_pthread.m4 problem for some Linux distributions.

William Orr <will@worrbase.com>

- \* Fixed detection of sched\_yield on Solaris.
- \* Added atomicops for Solaris

Andrew Paprocki <andrew@ishiboo.com>

- \* Fixed minor IBM xlC compiler build issues
- \* Added atomicops for AIX (POWER)

## 1.75 openssl 1.0.1.c

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# 1.76 hunspell 1.7.0

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- \* (Deinst@world.std.com). David and I are now
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- \* of MySpell back into a single tree. David has been
- \* a significant help in improving MySpell.

- \* Special thanks also go to La'szlo' Ne'meth
- \* <nemethl@gyorsposta.hu> who is the author of the
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# 1.79 system-componentmodel-annotations 4.6.25921.02

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             <!-- root node -->
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      < >
       44 0 10 7 2.</_>
       54 7 10 7 2.</ ></rects>
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    <!-- root node -->
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</opencv\_storage>

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John R. Hauser 2017 February 10

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#### ## Core Docs

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- # Contributions to .NET Core 2.0 Preview 2

We're still working out the best way to present contributors and trying to be as accurate as possible. The list below is generated with the following command listed below in an attempt to capture all contributions which have gone into .NET Core 2.0 Preview 2. Where multiple email addresses were returned for a single person, the counts were aggregated with the email address reported the most commits.

```
```bash git shortlog -sne --no-merges --since release/2.0.0@{2017-05-05} --until release/2.0.0@{2017-06-07}
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

- \* [CLI](#cli)
- \* [CoreCLR](#coreclr)
- \* [CoreFX](#corefx)
- \* [WCF](#wcf)

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- # Contributions to .NET Core 1.1

We're still working out the best way to present contributors and trying to be as accurate as possible. The list below is generated with the following command against each repo. The release qualifier is different from the example in some cases. Also, where multiple email addresses were returned for a single person, the counts were aggregated with the email address reported the most commits.

```
"bash git shortlog -sne --no-merges --since {2016-05-20} --until {2016-11-08}
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

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The list below is generated with the following command listed below in an attempt to capture all contributions which have gone into .NET Core 2.1.

```
"bash git shortlog -sne --no-merges --since 2017-11-16 --until 2018-05-15
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

- \* [CLI](#cli)
- \* [CoreCLR](#coreclr)
- \* [CoreFX](#corefx)
- \* [WCF](#wcf)

## CLI

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We're still working out the best way to present contributors and trying to be as accurate as possible. The list below is generated with the following command listed below in an attempt to capture all contributions which have gone into .NET Core 2.0 Preview 1. Where multiple email addresses were returned for a single person, the counts were aggregated with the email address reported the most commits.

```
"bash git shortlog -sne --no-merges --since release/2.0.0@{2016-10-03} --until release/2.0.0@{2017-05-05} --committer="dotnet-bot" --invert-grep
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

- \* [CLI](#cli)
- \* [CoreCLR](#coreclr)
- \* [CoreFX](#corefx)
- \* [WCF](#wcf)

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- # Contributions to .NET Core SDK 1.0

We're still working out the best way to present contributors and trying to be as accurate as possible. The list below is generated with the following command listed below in an attempt to capture all contributions which have gone into .NET Core SDK 1.0. Where multiple email addresses were returned for a single person, the counts were aggregated with the email address reported the most commits.

```
```bash git shortlog -sne --no-merges --until release/1.1.0@ {2017-02-25}
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

```
## .NET Core Tools (SDK)
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The list below is generated with the following command listed below in an attempt to capture all contributions which have gone into .NET Core 2.0.

```
```bash git shortlog -sne --no-merges --since release/2.0.0@ {2016-10-03} --until release/2.0.0@ {2017-07-25} ...
```

When you navigate to a contributors commit page, the results are not filtered by release so more commits than are listed below will be shown.

- \* [CLI](#cli)
- \* [CoreCLR](#coreclr)
- \* [CoreFX](#corefx)
- \* [WCF](#wcf)

#### ## CLI

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

#### HISTORY -

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

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

#### Some other contributors:

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

The SPARC specific code was originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by

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

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

 $Robert\ Brazile\ (brazile\ @\ diamond.bbn.com)\ originally\ supplied\ the\ ULTRIX\ code.$ 

Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX

systems. Parag Patel (parag@netcom.com) supplied the A/UX code.

Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and

Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port.

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

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

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

Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and

Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and

Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes.

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

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

Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to a Motorola 88K processor running CX/UX (Harris NightHawk). Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to nonIBM development environments (a nontrivial task). Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port. David Chase, then at Olivetti Research, suggested several improvements. Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the code to save and print call stacks for leak detection on a SPARC. Jesse Hull and John Ellis supplied the C++ interface code. Zhong Shao performed much of the experimentation that led to the current typed allocation facility. (His dynamic type inference code hasn't made it into the released version of the collector, yet.) Use of this software is granted under one of the following two licenses, to be chosen freely by the user.

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HISTORY -

README.changes.

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

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

Some other contributors:

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

The SPARC specific code was originally contributed by Mark Weiser.

The Encore Multimax modifications were supplied by

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

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

Robert Brazile (brazile@diamond.bbn.com) originally supplied the ULTRIX code. Al Dosser (dosser@src.dec.com) and Regis Cridlig (Regis.Cridlig@cl.cam.ac.uk) subsequently provided updates and information on variation between ULTRIX systems. Parag Patel (parag@netcom.com) supplied the A/UX code. Jesper Peterson(jep@mtiame.mtia.oz.au), Michel Schinz, and Martin Tauchmann (martintauchmann@bigfoot.com) supplied the Amiga port.

```
Thomas Funke (thf@zelator.in-berlin.de(?)) and
Brian D.Carlstrom (bdc@clark.lcs.mit.edu) supplied the NeXT ports.
Douglas Steel (doug@wg.icl.co.uk) provided ICL DRS6000 code.
Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader
specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and
Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and
Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes.
Alistair G. Crooks(agc@uts.amdahl.com) supplied the NetBSD and 386BSD ports.
Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port.
Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to
a Motorola 88K processor running CX/UX (Harris NightHawk).
Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to
nonIBM development environments (a nontrivial task).
Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port.
David Chase, then at Olivetti Research, suggested several improvements.
Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the
code to save and print call stacks for leak detection on a SPARC.
Jesse Hull and John Ellis supplied the C++ interface code.
Zhong Shao performed much of the experimentation that led to the
current typed allocation facility. (His dynamic type inference code hasn't
made it into the released version of the collector, yet.)
[/
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[section:mpl MPL Interoperability]
```

All the value based traits in this library conform to MPL's requirements for an [@../../../libs/mpl/doc/refmanual/integral-constant.html Integral Constant type].

Please note that these types no longer inherit from `mpl::true\_` or `mpl::false\_` etc, and the library will no longer implicitly include any MPL header. However there is an implicit conversion from `integral\_constant` to the corresponding MPL types, therefore tag-dispatching that uses MPL types in function overloads will still work as before.

```
[endsect]
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Mathias Koch (mkoch - at - idesis.de 7 : email to boost-owner@lists.boost.org Sep 2007 13:20:09 +0200)
--- end ---
#!/usr/bin/env python
from subprocess import check_output as run
from datetime import datetime
from itertools import groupby
from operator import itemgetter
import re
import magic
def authors(filename):
 log = run(['git', 'log', '--follow',
        '--date=short','--format=% aN% x09% ad', filename],
        universal newlines=True)
 for line in log.splitlines():
    author, date = line.split('\t')
    if author != 'fix-copyright.py':
       yield author, datetime.strptime(date, '%Y-%m-%d')
def new_copyright(filename, previous):
 def f():
    au = list(authors(filename))
    alldates = map(itemgetter(1), au)
    aup = sorted(au + map(lambda a: (a, None), previous), key=itemgetter(0))
    for author, records in groupby(aup, itemgetter(0)):
       dates = filter(None, map(itemgetter(1), records))
       if not dates: dates = alldates
       start = min(dates)
       end = max(dates)
       fmt = '\{0\}' if start.year == end.year else '\{0\}-\{1\}'
       line = 'Copyright' + fmt.format(start.year, end.year) + '' + author
       key = (start, author)
       yield key, line
 return map(itemgetter(1), sorted(f()))
def fix_copyright(filename):
 # Find copyright block in original file
 prefix = set()
```

```
names = []
 lines = []
 with open(filename, 'r') as f:
    content = list(f)
 for i, line in enumerate(content[:15]):
    m = re.match(r''(?P < prefix > W*)(\(c\))?\s*?copyright\s*(\(c\))?\s+\d\{4\}(\s^*-\s^*\d\{4\})?\s+(?P < name > .+?)\s^*\$',
line, re.IGNORECASE)
    if m:
       d = m.groupdict()
       prefix.add(d['prefix'])
       lines.append(i)
       names.append(d['name'].strip())
 if len(prefix) != 1:
    print 'Not found:', filename
    return
 prefix = list(prefix)[0]
 print filename
 new = iter(new_copyright(filename, names))
 with open(filename, 'w') as f:
    for i, line in enumerate(content):
       if i in lines:
         for repl in new:
            print >>f, prefix + repl
      else:
         print >>f, line,
 pass
def all files():
 ls = run(['git', 'ls-files'], universal_newlines=True)
 for filename in ls.splitlines():
    if magic.from_file(filename, mime=True).split('/')[0] == 'text':
       yield filename
for f in all_files():
 fix_copyright(f)
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- implemented file-format e.g. WKB
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```
#ifndef BOOST CONFIG HPP
# include <boost/config.hpp>
#endif
#if defined(BOOST_HAS_PRAGMA_ONCE)
# pragma once
#endif
#include <boost/intrusive/detail/config begin.hpp>
#include <boost/move/detail/type_traits.hpp>
#include <cstddef>
namespace boost {
namespace intrusive {
namespace detail {
using boost::move detail::is same;
using boost::move_detail::add_const;
using boost::move_detail::remove_const;
using boost::move detail::remove cv;
using boost::move_detail::remove_reference;
using boost::move_detail::add_reference;
using boost::move detail::remove pointer;
using boost::move_detail::add_pointer;
using boost::move_detail::true_type;
using boost::move detail::false type;
using boost::move_detail::enable_if_c;
using boost::move_detail::enable_if;
using boost::move_detail::disable_if_c;
using boost::move_detail::disable_if;
using boost::move_detail::is_convertible;
using boost::move_detail::if_c;
using boost::move_detail::if_;
using boost::move_detail::is_const;
using boost::move_detail::identity;
using boost::move_detail::alignment_of;
using boost::move_detail::is_empty;
using boost::move_detail::addressof;
using boost::move_detail::integral_constant;
using boost::move_detail::enable_if_convertible;
using boost::move_detail::disable_if_convertible;
using boost::move_detail::bool_;
using boost::move_detail::true_;
using boost::move_detail::false_;
using boost::move_detail::yes_type;
using boost::move_detail::no_type;
using boost::move_detail::apply;
```

```
using boost::move_detail::eval_if_c;
using boost::move_detail::eval_if;
using boost::move_detail::unvoid_ref;
using boost::move_detail::add_const_if_c;
template<std::size_t S>
struct ls zeros
 static const std::size_t value = (S \& std::size_t(1)) ? 0 : (1 + ls_zeros < (S >> 1u) > ::value);
};
template<>
struct ls_zeros<0>
 static const std::size_t value = 0;
};
template<>
struct ls_zeros<1>
 static const std::size_t value = 0;
};
// Infrastructure for providing a default type for T::TNAME if absent.
#define BOOST_INTRUSIVE_INSTANTIATE_DEFAULT_TYPE_TMPLT(TNAME) \
 template <typename T, typename DefaultType>
 struct boost_intrusive_default_type_ ## TNAME
 {
  template <typename X>
  static char test(int, typename X::TNAME*);
  template <typename X>
  static int test(...);
  struct DefaultWrap { typedef DefaultType TNAME; };
  static const bool value = (1 == sizeof(test < T > (0, 0)));
  typedef typename
    ::boost::intrusive::detail::if_c
      <value, T, DefaultWrap>::type::TNAME type;
 };
 //
#define BOOST_INTRUSIVE_OBTAIN_TYPE_WITH_DEFAULT(INSTANTIATION_NS_PREFIX, T,
TNAME, TIMPL) \
  typename INSTANTIATION_NS_PREFIX
    boost_intrusive_default_type_ ## TNAME< T, TIMPL >::type
```

```
//
#define BOOST_INTRUSIVE_INSTANTIATE_EVAL_DEFAULT_TYPE_TMPLT(TNAME)\
 template <typename T, typename DefaultType>
 struct boost_intrusive_eval_default_type_ ## TNAME
  template <typename X>
  static char test(int, typename X::TNAME*);
  template <typename X>
  static int test(...);
  struct DefaultWrap
  { typedef typename DefaultType::type TNAME; };
  static const bool value = (1 == sizeof(test < T > (0, 0)));
  typedef typename
    ::boost::intrusive::detail::eval_if_c
      < value
      ,::boost::intrusive::detail::identity<T>
      , ::boost::intrusive::detail::identity<DefaultWrap> \
      >::type::TNAME type;
 };
//
#define BOOST_INTRUSIVE_OBTAIN_TYPE_WITH_EVAL_DEFAULT(INSTANTIATION_NS_PREFIX, T,
TNAME, TIMPL) \
  typename INSTANTIATION_NS_PREFIX
    boost_intrusive_eval_default_type_ ## TNAME< T, TIMPL >::type
//
#define BOOST_INTRUSIVE_INTERNAL_STATIC_BOOL_IS_TRUE(TRAITS_PREFIX,
TYPEDEF_TO_FIND) \
template <class T>\
struct TRAITS_PREFIX##_bool\
{\
 template<bool Add>\
 struct two_or_three {yes_type _[2 + Add];};\
 template <class U> static yes_type test(...);\
```

struct TRAITS\_PREFIX##\_bool\_is\_true\

static const std::size\_t value = sizeof(test<T>(0));\

**};**\

{\

template <class T>\

template <class U> static two\_or\_three<U::TYPEDEF\_TO\_FIND> test (int);\

static const bool value = TRAITS\_PREFIX##\_bool<T>::value > sizeof(yes\_type)\*2;\

```
};\
//
#define BOOST_INTRUSIVE_HAS_STATIC_MEMBER_FUNC_SIGNATURE(TRAITS_NAME,
FUNC NAME) \
template <typename U, typename Signature> \
class TRAITS NAME \
{ \
private: \
template<Signature> struct helper;\
template<typename T>\
static ::boost::intrusive::detail::yes_type test(helper<&T::FUNC_NAME>*); \
template<typename T> static ::boost::intrusive::detail::no_type test(...); \
public: \
static const bool value = sizeof(test<U>(0)) == sizeof(::boost::intrusive::detail::yes_type);
}; \
//
#define BOOST_INTRUSIVE_HAS_MEMBER_FUNC_CALLED(TRAITS_NAME, FUNC_NAME) \
template <typename Type> \
struct TRAITS NAME \
{ \
 struct BaseMixin \
  void FUNC_NAME(); \
 }; \
 struct Base : public Type, public BaseMixin { Base(); }; \
 template <typename T, T t> class Helper{}; \
 template <typename U> \
 static ::boost::intrusive::detail::no_type test(U*, Helper<void (BaseMixin::*)(), &U::FUNC_NAME>* = 0);
 static ::boost::intrusive::detail::yes_type test(...); \
 static const bool value = sizeof(::boost::intrusive::detail::yes_type) == sizeof(test((Base*)(0)));
};\
//
#define BOOST_INTRUSIVE_HAS_MEMBER_FUNC_CALLED_IGNORE_SIGNATURE(TRAITS_NAME,
FUNC_NAME) \
BOOST_INTRUSIVE_HAS_MEMBER_FUNC_CALLED(TRAITS_NAME##_ignore_signature, FUNC_NAME)
template <typename Type, class> \
struct TRAITS_NAME \
 : public TRAITS_NAME##_ignore_signature<Type> \
{};\
//
} //namespace detail
} //namespace intrusive
```

```
} //namespace boost
```

#include <boost/intrusive/detail/config\_end.hpp>

#endif //BOOST\_INTRUSIVE\_DETAIL\_MPL\_HPP Boost Software License - Version 1.0 - August 17th, 2003

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<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=US-ASCII">
<title>MPL Interoperability</title>
k rel="stylesheet" href="../../../doc/src/boostbook.css" type="text/css">
<meta name="generator" content="DocBook XSL Stylesheets V1.79.1">
<link rel="home" href="../index.html" title="Chapter&#160;1.&#160;Boost.TypeTraits">
k rel="up" href="../index.html" title="Chapter 1. Boost.TypeTraits">
k rel="next" href="examples.html" title="Examples">
</head>
<br/>
<body bgcolor="white" text="black" link="#0000FF" vlink="#840084" alink="#0000FF">
<img alt="Boost C++ Libraries" width="277" height="86" src="../../../boost.png">
<a href="../../../index.html">Home</a>
<a href="../../../libs/libraries.htm">Libraries</a>
<a href="http://www.boost.org/users/people.html">People</a>
<a href="http://www.boost.org/users/faq.html">FAQ</a>
<a href="../../../more/index.htm">More</a>
<hr>
<div class="spirit-nav">
<a accesskey="p" href="intrinsics.html"><img src="../../../doc/src/images/prev.png" alt="Prev"></a><a
accesskey="u" href="../index.html"><img src="../../../.doc/src/images/up.png" alt="Up"></a><a accesskey="h"
href="../index.html"><img src="../../../doc/src/images/home.png" alt="Home"></a><a accesskey="n"
href="examples.html"><img src="../../../doc/src/images/next.png" alt="Next"></a>
</div>
```

```
<div class="section">
<div class="titlepage"><div><div><h2 class="title" style="clear: both">
<a name="boost_typetraits.mpl"></a><a class="link" href="mpl.html" title="MPL Interoperability">MPL
Interoperability</a>
</h2></div></div>
  All the value based traits in this library conform to MPL's requirements for
  an <a href="../../../libs/mpl/doc/refmanual/integral-constant.html" target="_top">Integral
  Constant type</a>.
 >
  Please note that these types no longer inherit from <code class="computeroutput"><span
class="identifier">mpl</span><span class="special">::</span><span class="identifier">true </span></code> or
  <code class="computeroutput"><span class="identifier">mpl</span><span class="special">:::</span><span
class="identifier">false_</span></code> etc, and the library will no longer
  implicitly include any MPL header. However there is an implicit conversion
  from <code class="computeroutput"><span class="identifier">integral_constant</span></code> to the
  corresponding MPL types, therefore tag-dispatching that uses MPL types in function
  overloads will still work as before.
 </div>
<div class="copyright-footer">Copyright &#169; 2000, 2011 Adobe Systems Inc, David
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  Frederic Bron, Steve Cleary, Beman Dawes, Aleksey Gurtovoy, Howard Hinnant,
  Jesse Jones, Mat Marcus, Itay Maman, John Maddock, Alexander Nasonov, Thorsten
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target="_top">http://www.boost.org/LICENSE_1_0.txt</a>)
  </div>
<hr>
<div class="spirit-nav">
<a accesskey="p" href="intrinsics.html"><img src="../../../.doc/src/images/prev.png" alt="Prev"></a><a
accesskey="u" href="../index.html"><img src="../../../doc/src/images/up.png" alt="Up"></a><a accesskey="h"
href="../index.html"><img src="../../../doc/src/images/home.png" alt="Home"></a><a accesskey="n"
href="examples.html"><img src="../../../doc/src/images/next.png" alt="Next"></a>
</div>
</body>
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```

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Mathias Koch (mkoch - at - idesis.de 7 : email to boost-owner@lists.boost.org Sep 2007 13:20:09 +0200)
--- end ---
This package was debianized by Vladimir Prus <ghost@cs.msu.su> on
Wed, 17 July 2002, 19:27:00 +0400.
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 /+\
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```

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```

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```
*/
#include "licence_info.hpp"
#include "bcp_imp.hpp"
#include "fileview.hpp"
#include <fstream>
#include <iomanip>
#include <cstring>
#include <stdexcept>
#include <boost/lexical_cast.hpp>
#include <boost/filesystem/operations.hpp>
#include <boost/throw_exception.hpp>
//
// split_path is a small helper for outputting a path name,
// complete with a link to that path:
struct split_path
 const fs::path& root;
 const fs::path& file;
 split_path(const fs::path& r, const fs::path& f)
   : root(r), file(f){}
private:
 split_path& operator=(const split_path&);
std::ostream& operator << (std::ostream& os, const split_path& p)
 os << "<a href=\"" << (p.root / p.file).string() << "\">" << p.file.string() << "</a>";
 return os;
std::string make_link_target(const std::string& s)
 // convert an arbitrary string into something suitable
 // for an <a> name:
 std::string result;
 for(unsigned i = 0; i < s.size(); ++i)
   result.append(1, static_cast<std::string::value_type>(std::isalnum(s[i]) ? s[i] : '_'));
 }
 return result;
}
void bcp_implementation::output_license_info()
```

```
std::pair<const license_info*, int> licenses = get_licenses();
std::map<int, license_data>::const_iterator i, j;
i = m_license_data.begin();
j = m_license_data.end();
std::ofstream\ os(m\_dest\_path.string().c\_str());
if(!os)
{
  std::string msg("Error opening ");
  msg += m_dest_path.string();
  msg += " for output.";
  std::runtime_error e(msg);
  boost::throw_exception(e);
}
os <<
  "<!DOCTYPE HTML PUBLIC \"-//W3C//DTD HTML 4.0 Transitional//EN\">\n"
  "<html>\n"
  "\!\!<\!\!head\!\!>\!\!\backslash n"
  "<title>Boost Licence Dependency Information";
if(m_module_list.size() == 1)
  os << " for " << *(m_module_list.begin());
}
os <<
  "</title>\n"
  "</head>\n"
  "<body>\n"
  "<H1>Boost Licence Dependency Information";
if(m_module_list.size() == 1)
  os << " for " << *(m_module_list.begin());
}
os <<
  "</H1>\n"
  "<H2>Contents</h2>\n"
  "<a href=\"#input\">Input Information</a>\n";
if(!m_bsl_summary_mode)
  os << "<a href=\"#summary\">Licence Summary</a>\n";
os << "<a href=\"#details\">Licence Details</a>\n";
while(i != j)
{
 // title:
  os << " <A href=\"#" << make_link_target(licenses.first[i->first].license_name)
   << "\">" << licenses.first[i->first].license_name << "</a>\n";
  ++i;
```

```
}
os << "<a href=\"#files\">Files with no recognised license</a>\n"
 "<a href=\"#authors\">Files with no recognised copyright holder</a>\n";
if(!m_bsl_summary_mode)
 os <<
 "Moving to the Boost Software License...\n"
 " <a href=\"#bsl-converted\">Files that can be automatically converted to the Boost Software License</a>\n"
 " <a href=\"#to-bsl\">Files that can be manually converted to the Boost Software License</a>\n"
 " <a href=\"#not-to-bsl\">Files that can <b>NOT</b> be moved to the Boost Software License</a>\n"
 " <a href=\"#need-bsl-authors\">Authors we need to move to the Boost Software License</a>\n"
 "<a href=\"#copyright\">Copyright Holder Information</a>\n";
}
os <<
 "<a href=\"#depend\">File Dependency Information</a>\n"
 "";
//
// input Information:
os << "<a name=\inv (n)"></a><h2>Input Information</h2>\inv (n)";
if(m_scan_mode)
 os << "<P>The following files were scanned for boost dependencies:<BR>";
else
 os << "<P>The following Boost modules were checked:<BR>";
std::list<std::string>::const_iterator si = m_module_list.begin();
std::list<std::string>::const_iterator sj = m_module_list.end();
while(si != sj)
{
 os << *si << "<BR>";
 ++si;
}
os << "</p>The Boost path was: <code>" << m_boost_path.string() << "</code></P>";
// extract the boost version number from the boost directory tree,
// not from this app (which may have been built from a previous
// version):
//
fileview version_file(m_boost_path / "boost/version.hpp");
static const boost::regex version_regex(
 "^[[:blank:]]*#[[:blank:]]*define[[:blank:]]+BOOST_VERSION[[:blank:]]+(\d+)");
boost::cmatch what;
if(boost::regex_search(version_file.begin(), version_file.end(), what, version_regex))
 int version = boost::lexical_cast<int>(what.str(1));
 os << "<p>The Boost version is: " << version / 100000 << "." << version / 100 % 1000 << "." << version % 100
```

```
<< "</P>\n";
// output each license:
i = m license data.begin();
j = m_license_data.end();
if(!m_bsl_summary_mode)
{
  //
  // start with the summary:
  os << "<a name=\"summary\"></a><h2>Licence Summary</h2>\n";
  while(i != j)
  {
    // title:
    os <<
      "<H3>" << licenses.first[i->first].license_name << "</H3>\n";
    // license text:
    os << "<BLOCKQUOTE>" << licenses.first[i->first].license_text << "</BLOCKQUOTE>";
    // Copyright holders:
    os << "<P>This license is used by " << i->second.authors.size()
      << " authors and " << i->second.files.size()
      << "files < a href=\\""<< make\_link\_target(licenses.first[i->first].license\_name) << "\\">(see details)</a>";
    os << "</P></BLOCKQUOTE>\n";
    ++i;
  }
 }
// and now the details:
i = m_license_data.begin();
j = m_license_data.end();
int license_index = 0;
os << "<a name=\"details\"></a>>Licence Details</h2>\n";
while(i != j)
  // title:
  os <<
    "<H3><A name=\"" << make_link_target(licenses.first[i->first].license_name)
    << "\"></a>" << licenses.first[i->first].license_name << "</H3>\n";
  // license text:
  os << "<BLOCKQUOTE>" << licenses.first[i->first].license_text << "</BLOCKQUOTE>";
  if(!m_bsl_summary_mode || (license_index >= 3))
  {
    // Copyright holders:
    os << "<P>This license is used by the following " << i->second.authors.size() << " copyright
```

```
holders:</P>\n<BLOCKQUOTE><P>";
    std::set<std::string>::const_iterator x, y;
    x = i->second.authors.begin();
    y = i->second.authors.end();
    while(x != y)
      os << *x << "<BR>\n";
      ++x;
    os << "</P></BLOCKQUOTE>\n";
    // Files using this license:
    os << "<P>This license applies to the following " << i->second.files.size() << "
files:</P>\n<BLOCKQUOTE><P>";
    std::set<fs::path, path_less>::const_iterator m, n;
    m = i->second.files.begin();
    n = i->second.files.end();
    while(m != n)
      os << split_path(m_boost_path, *m) << "<br/>br>\n";
      ++m;
    os << "</P></BLOCKQUOTE>\n";
   }
   else
    os << "<P>This license is used by " << i->second.authors.size() << " authors (list omitted for brevity).</P>\n";
    os << "<P>This license applies to " << i->second.files.size() << " files (list omitted for brevity).</P>\n";
   }
   ++license_index;
   ++i;
 }
 //
 // Output list of files not found to be under license control:
 //
 os << "<h2><a name=\"files\"></a>Files With No Recognisable Licence</h2>\n"
   "<P>The following " << m_unknown_licenses.size() << " files had no recognisable license
information:</P><BLOCKQUOTE><P>\n";
 std::set<fs::path, path_less>::const_iterator i2, j2;
 i2 = m_unknown_licenses.begin();
 j2 = m_unknown_licenses.end();
 while(i2!=j2)
   os << split_path(m_boost_path, *i2) << "<br/>br>\n";
  ++i2;
 }
 os << "</p></BLOCKQUOTE>";
 // Output list of files with no found copyright holder:
```

```
os << "<h2><a name=\"authors\"></a>Files With No Recognisable Copyright Holder</h2>\n"
  "<P>The following " << m_unknown_authors.size() << " files had no recognisable copyright
holder:</P>\n<BLOCKQUOTE><P>";
 i2 = m_unknown_authors.begin();
 j2 = m_unknown_authors.end();
 while(i2 != j2)
  os << split_path(m_boost_path, *i2) << "<br/>br>\n";
  ++i2:
 os << "</p></BLOCKQUOTE>";
 if(!m_bsl_summary_mode)
 {
  //
  // Output list of files that have been moved over to the Boost
  // Software License, along with enough information for human
  // verification.
  //
  os << "<h2><a name=\"bsl-converted\"></a>Files that can be automatically converted to the Boost Software
License</h2>\n"
    << "<P>The following " << m_converted_to_bsl.size() << " files can be automatically converted to the Boost
Software License, but require manual verification before they can be committed to CVS:</P>\n";
  if (!m_converted_to_bsl.empty())
  {
    typedef std::map<fs::path, std::pair<std::string, std::string>, path_less>
      ::const_iterator conv_iterator;
    conv_iterator i = m_converted_to_bsl.begin(),
             ie = m_converted_to_bsl.end();
    int file num = 1;
    while (i != ie)
      os << "<P>[" << file_num << "] File: <tt>" << split_path(m_boost_path, i->first)
        << "</tt><br>\n\n <tr>\n <td><pre>"
        << i->second.first << "</pre>\n "
        << i->second.second << "</pre></td>\n </tr>\n</table>\n";
      ++i;
      ++file_num;
    }
  }
  // Output list of files that could be moved over to the Boost Software License
  //
  os << "<h2><a name=\"to-bsl\"></a>Files that could be converted to the Boost Software License</h2>\n"
   "<P>The following " << m_can_migrate_to_bsl.size() << " files could be manually converted to the Boost
Software License, but have not yet been:</P>\n<BLOCKQUOTE><P>";
  i2 = m_can_migrate_to_bsl.begin();
  j2 = m_can_migrate_to_bsl.end();
```

```
while(i2!=j2)
    os << split_path(m_boost_path, *i2) << "<br/>br>\n";
    ++i2;
   os << "</p></BLOCKQUOTE>";
   //
   // Output list of files that can not be moved over to the Boost Software License
   os << "<h2><a name=\"not-to-bs\\"></a>Files that can NOT be converted to the Boost Software
License</h2>\n"
   "<P>The following " << m_cannot_migrate_to_bsl.size() << " files cannot be converted to the Boost Software
License because we need the permission of more authors:</P>\n<BLOCKQUOTE><P>";
   i2 = m_cannot_migrate_to_bsl.begin();
  j2 = m_cannot_migrate_to_bsl.end();
   while(i2 != j2)
    os << split path(m boost path, *i2) << "<br>\n";
    ++i2:
   }
   os << "</p></BLOCKQUOTE>";
   //
   // Output list of authors that we need permission for to move to the BSL
   os << "<h2><a name=\"need-bsl-authors\"></a>Authors we need for the BSL</h2>\n"
    "<P>Permission of the following authors is needed before we can convert to the Boost Software License. The
list of authors that have given their permission is contained in <code>more/blanket-
permission.txt</code>.</P>\n<BLOCKQUOTE><P>";
   std::copy(m_authors_for_bsl_migration.begin(), m_authors_for_bsl_migration.end(),
        std::ostream_iterator<std::string>(os, "<br>\n"));
   os << "</p></BLOCKQUOTE>";
   //
   // output a table of copyright information:
   //
   os << "<H2><a name=\"copyright\"></a>Copyright Holder Information</H2>\n";
   std::map<std::string, std::set<fs::path, path_less> >::const_iterator ad, ead;
   ad = m_author_data.begin();
   ead = m_author_data.end();
   while(ad != ead)
   {
    os << "<tr>" << ad->first << "</td>";
    std::set<fs::path, path_less>::const_iterator fi, efi;
    fi = ad->second.begin();
    efi = ad->second.end();
    while(fi != efi)
      os << split_path(m_boost_path, *fi) << " ";
      ++fi;
```

```
os << "</td>\n":
   ++ad;
 }
 os << "</table>\n";
//
// output file dependency information:
os << "<H2><a name=\"depend\"></a>File Dependency Information</H2><BLOCKQUOTE>\n";
std::map<fs::path, fs::path, path_less>::const_iterator dep, last_dep;
std::set<fs::path, path_less>::const_iterator fi, efi;
fi = m_copy_paths.begin();
efi = m_copy_paths.end();
// if in summary mode, just figure out the "bad" files and print those only:
std::set<fs::path, path_less> bad_paths;
if(m bsl summary mode)
{
 bad_paths.insert(m_unknown_licenses.begin(), m_unknown_licenses.end());
 bad\_paths.insert(m\_unknown\_authors.begin(), m\_unknown\_authors.end());
 bad_paths.insert(m_can_migrate_to_bsl.begin(), m_can_migrate_to_bsl.end());
 bad_paths.insert(m_cannot_migrate_to_bsl.begin(), m_cannot_migrate_to_bsl.end());
 typedef std::map<fs::path, std::pair<std::string, std::string>, path_less>
   ::const_iterator conv_iterator;
 conv_iterator i = m_converted_to_bsl.begin(),
          ie = m_converted_to_bsl.end();
 while(i != ie)
   bad_paths.insert(i->first);
   ++i;
 fi = bad_paths.begin();
 efi = bad_paths.end();
 os << "<P>For brevity, only files not under the BSL are shown</P>\n";
while(fi != efi)
 os << split_path(m_boost_path, *fi);
 dep = m_dependencies.find(*fi);
 last_dep = m_dependencies.end();
 std::set<fs::path, path_less> seen_deps;
 if (dep != last_dep)
  while(true)
     os << " -> ";
     if(fs::exists(m_boost_path / dep->second))
      os << split_path(m_boost_path, dep->second);
```

```
else if(fs::exists(dep->second))
       os << split_path(fs::path(), dep->second);
      else
       os << dep->second.string();
      if(seen_deps.find(dep->second) != seen_deps.end())
        os << " <I>(Circular dependency!)</I>";
        break; // circular dependency!!!
      seen_deps.insert(dep->second);
      last_dep = dep;
      dep = m_dependencies.find(dep->second);
      if((dep == m\_dependencies.end()) \parallel (0 == compare\_paths(dep->second, last\_dep->second)))
       break;
     }
   os << "\n";
   ++fi;
 os << "</pre></BLOCKQUOTE>\n";
 os << "</body></html>\n";
 if(!os)
   std::string msg("Error writing to ");
   msg += m_dest_path.string();
   msg += ".";
   std::runtime_error e(msg);
   boost::throw_exception(e);
This package was debianized by Vladimir Prus <ghost@cs.msu.su> on
Wed, 17 July 2002, 19:27:00 +0400.
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Bill Janssen (janssen@parc.xerox.com) supplied the SunOS dynamic loader

specific code. Manuel Serrano (serrano@cornas.inria.fr) supplied linux and Sony News specific code. Al Dosser provided Alpha/OSF/1 code. He and Dave Detlefs(detlefs@src.dec.com) also provided several generic bug fixes. Alistair G. Crooks(agc@uts.amdahl.com) supplied the NetBSD and 386BSD ports. Jeffrey Hsu (hsu@soda.berkeley.edu) provided the FreeBSD port. Brent Benson (brent@jade.ssd.csd.harris.com) ported the collector to a Motorola 88K processor running CX/UX (Harris NightHawk). Ari Huttunen (Ari.Huttunen@hut.fi) generalized the OS/2 port to nonIBM development environments (a nontrivial task). Patrick Beard (beard@cs.ucdavis.edu) provided the initial MacOS port. David Chase, then at Olivetti Research, suggested several improvements. Scott Schwartz (schwartz@groucho.cse.psu.edu) supplied some of the code to save and print call stacks for leak detection on a SPARC. Jesse Hull and John Ellis supplied the C++ interface code. Zhong Shao performed much of the experimentation that led to the current typed allocation facility. (His dynamic type inference code hasn't made it into the released version of the collector, yet.) [article Copyright Test [quickbook 1.5] [copyright 1963-1965 Jane Doe, 2018 Joe Blow, John Coe] [copyright 1977,1985 Someone else] Software License, Version 1.0

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Andrew Lumsdaine ()

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Herv Brnnimann (hbr -at- poly.edu)

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Kevlin Henney (kevlin -at- curbralan.com) (See Boost list message of Wed, 15 Sep 2004 18:15:17 +0200)

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Steve Cleary (Variant of Stephen Cleary)

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William E. Kempf () (email to Beman Dawes, 9/14/2006 4:18 PM)

Joerg Walter (jhr.walter - at - t-online.de : email to ublas mailing list Mon, 17 Sep 2007 10:17:08 +0200)

Mathias Koch (mkoch - at - idesis.de 7 : email to boost-owner@lists.boost.org Sep 2007 13:20:09 +0200)

--- end ---

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<!-- boost-no-inspect -->
<!-- HTML header for doxygen 1.8.9.1-->
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"</p>
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
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<head>
<meta http-equiv="Content-Type" content="text/xhtml;charset=UTF-8"/>
<meta http-equiv="X-UA-Compatible" content="IE=9"/>
<meta name="generator" content="Doxygen 1.8.11"/>
<title>Boost.Hana: Boost.MPL adapters</title>
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<script type="text/javascript" src="jquery.js"></script>
<script type="text/javascript" src="dynsections.js"></script>
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<script type="text/javascript" src="resize.js"></script>
<script type="text/javascript" src="navtreedata.js"></script>
<script type="text/javascript" src="navtree.js"></script>
<script type="text/javascript">
$(document).ready(initResizable);
$(window).load(resizeHeight);
</script>
k href="search/search.css" rel="stylesheet" type="text/css"/>
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<script type="text/javascript" src="search/search.js"></script>
<script type="text/javascript">
$(document).ready(function() { init_search(); });
</script>
<script type="text/x-mathjax-config">
MathJax.Hub.Config({
 extensions: ["tex2jax.js"],
 jax: ["input/TeX","output/HTML-CSS"],
});
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MathJax.Hub.Config({
 "HTML-CSS": {
    linebreaks: {
      automatic: true,
      width: "75% container"
  }
```

```
});
</script><script type="text/javascript" src="https://cdn.mathjax.org/mathjax/latest/MathJax.js"></script>
k href="doxygen.css" rel="stylesheet" type="text/css" />
<!-- Additional javascript for drawing charts. -->
<script type="text/javascript" src="highcharts.js"></script>
<script type="text/javascript" src="highcharts-data.js"></script>
<script type="text/javascript" src="highcharts-exporting.js"></script>
<script type="text/javascript" src="chart.js"></script>
<script type="text/javascript" src="hana.js"></script>
</head>
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<div id="top"><!-- do not remove this div, it is closed by doxygen! -->
<div id="titlearea">
<img alt="Logo" src="Boost.png"/>
<div id="projectname">Boost.Hana
 <span id="projectnumber">1.2.0</span>
</div>
<div id="projectbrief">Your standard library for metaprogramming</div>
<div id="MSearchBox" class="MSearchBoxInactive">
   <span class="left">
    <img id="MSearchSelect" src="search/mag sel.png"</pre>
       onmouseover="return searchBox.OnSearchSelectShow()"
       onmouseout="return searchBox.OnSearchSelectHide()"
       alt=""/>
    <input type="text" id="MSearchField" value="Search" accesskey="S"</pre>
       onfocus="searchBox.OnSearchFieldFocus(true)"
       onblur="searchBox.OnSearchFieldFocus(false)"
       onkeyup="searchBox.OnSearchFieldChange(event)"/>
    </span><span class="right">
     <a id="MSearchClose" href="javascript:searchBox.CloseResultsWindow()"><img id="MSearchCloseImg"
border="0" src="search/close.png" alt=""/></a>
    </span>
   </div>
</div>
<!-- end header part -->
<!-- Generated by Doxygen 1.8.11 -->
<script type="text/javascript">
var searchBox = new SearchBox("searchBox", "search",false,'Search');
</script>
```

```
</div><!-- top -->
<div id="side-nav" class="ui-resizable side-nav-resizable">
<div id="nav-tree">
 <div id="nav-tree-contents">
  <div id="nav-sync" class="sync"></div>
 </div>
</div>
<div id="splitbar" style="-moz-user-select:none;"</pre>
  class="ui-resizable-handle">
</div>
</div>
<script type="text/javascript">
$(document).ready(function(){initNavTree('group_group-ext-mpl.html',");});
</script>
<div id="doc-content">
<!-- window showing the filter options -->
<div id="MSearchSelectWindow"
  onmouseover="return searchBox.OnSearchSelectShow()"
 onmouseout="return searchBox.OnSearchSelectHide()"
 onkeydown="return searchBox.OnSearchSelectKey(event)">
</div>
<!-- iframe showing the search results (closed by default) -->
<div id="MSearchResultsWindow">
<iframe src="javascript:void(0)" frameborder="0"</pre>
   name="MSearchResults" id="MSearchResults">
</iframe>
</div>
<div class="header">
<div class="summary">
<a href="#nested-classes">Classes</a> </div>
<div class="headertitle">
<div class="title">Boost.MPL adapters<div class="ingroups"><a class="el" href="group__group__</pre>
ext.html">External adapters</a></div></div>
</div><!--header-->
<div class="contents">
<a name="details" id="details"></a><h2 class="groupheader">Description</h2>
Adapters for Boost.MPL containers. 
<h2 class="groupheader"><a name="nested-classes"></a>
Classes</h2>
struct  <td
class="memItemRight" valign="bottom"><a class="el"
href="structboost_1_1mpl_1_1integral__c.html">boost::mpl::integral__c< T, v ></a>
 Adapter for IntegralConstants
from the Boost.MPL. <a href="structboost_1_1mpl_1_1integral__c.html#details">More...</a><br/>/>
```

```
struct  <td
class="memItemRight" valign="bottom"><a class="el" href="structboost_1_1mpl_1_1list.html">boost::mpl::list< T
></a>
 Adapter for Boost.MPL lists.
<a href="structboost_1_1mpl_1_1list.html#details">More...</a><br/>br />
 
class="memItemRight" valign="bottom"><a class="el"
href="structboost_1_1mpl_1_1vector.html">boost::mpl::vector< T ></a>
 Adapter for Boost.MPL
vectors. <a href="structboost_1_1mpl_1_1vector.html#details">More...</a><br/>/>
 
</div><!-- contents -->
</div><!-- doc-content -->
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-->
<!-- boost-no-inspect -->
<!-- HTML footer for doxygen 1.8.9.1-->
<!-- start footer part -->
<div id="nav-path" class="navpath"><!-- id is needed for treeview function! -->
\langle ul \rangle
</div>
</body>
</html>
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<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE article PUBLIC "-//Boost//DTD BoostBook XML V1.0//EN"
"http://www.boost.org/tools/boostbook/dtd/boostbook.dtd">
<article id="copyright_test" last-revision="DEBUG MODE Date: 2000/12/20 12:00:00 $"
xmlns:xi="http://www.w3.org/2001/XInclude">
<title>Copyright Test</title>
<articleinfo>
 <copyright>
  <year>1963</year> <year>1964der>1965</p
 </copyright>
 <copyright>
  <year>2018</year> <holder>Joe Blow, John Coe</holder>
 </copyright>
 <copyright>
  <year>1977</year> <year>1985</year> <holder>Someone else</holder>
 </copyright>
</articleinfo>
</article>
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE article PUBLIC "-//Boost//DTD BoostBook XML V1.0//EN"
"http://www.boost.org/tools/boostbook/dtd/boostbook.dtd">
<article id="copyright_test" last-revision="DEBUG MODE Date: 2000/12/20 12:00:00 $"
xmlns:xi="http://www.w3.org/2001/XInclude">
<title>Copyright Test</title>
<articleinfo>
 <copyright>
```

```
<year>1963</year> <year>1964</year> <year>1965</year> <holder>Jane Doe</holder>
</copyright>
<year>2018</year> <holder>Joe Blow, John Coe</holder>
</copyright>
<copyright>
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</articleinfo>
</article>
var group__group_ext_mpl =

[ "integral_c", "structboost_1_1mpl_1_1integral__c.html", null ],
 [ "list", "structboost_1_1mpl_1_1vector.html", null ]

[ "vector", "structboost_1_1mpl_1_1vector.html", null ]
];
```

# 1.88 logofx-client-bootstrapping-core 2.0.0

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The basic library functions are written in C and are freestanding. Also included in the distribution is a set of C++ wrapper functions.

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Written by: Philip Hazel Email local part: ph10 Email domain: cam.ac.uk

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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.

| from           |          |          | compatible? (1) |       |     |
|----------------|----------|----------|-----------------|-------|-----|
| 0.9.0 thru 1.2 |          | 1991-    | 1995 CW         | I y   | es  |
| 1.3 thru 1.    | .5.2 1.2 | 1995     | 1995-1999 CNRI  |       | 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  | 6.1 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 ab     | ove 2.1  | .1 200   | )1-now P        | SF    | yes |

Derived Year

Owner

GPL-

#### Footnotes:

Release

- (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.

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