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## 1.10 boost 1.65

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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(agg@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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--- end ---

This package was debianized by Vladimir Prus <ghost@cs.msu.su> on  
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The default copyright note for C++ source files reads:

```
// Boost.Geometry (aka GGL, Generic Geometry Library)
```

```
// Copyright (c) 2007-2011 Barend Gehrels, Amsterdam, the Netherlands.
```

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```

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```

```
// Parts of Boost.Geometry are redesigned from Geodan's Geographic Library
```

```
// (geolib/GGL), copyright (c) 1995-2010 Geodan, Amsterdam, the Netherlands.
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Examples:

- adapted geometry types e.g. array, Boost.Polygon
- implemented file-format e.g. WKB
- implemented specific strategy or algorithm e.g. intersections

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- 4) Tests -> might take sole copyright
- 5) Docs -> might take sole copyright
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The copyright note for other (source) files as .py, Jamfiles, etc is similar and comments are changed accordingly.

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](mailto: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](mailto: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(agg@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.)

```
<?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>
    <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>
[/
```

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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](http://@../.../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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```
#!/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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Joerg Walter (jhr.walter - at - t-online.de : email to ublas mailing list Mon, 17 Sep 2007 10:17:08 +0200)  
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```
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- implemented file-format e.g. WKB
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```

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// http://www.boost.org/LICENSE_1_0.txt)
//
// See http://www.boost.org/libs/intrusive for documentation.
//
////////////////////////////////////

#ifndef BOOST_INTRUSIVE_DETAIL_MPL_HPP
#define BOOST_INTRUSIVE_DETAIL_MPL_HPP

#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(...); \
    template <class U> static two_or_three<U::TYPEDEF_TO_FIND> test (int); \
    static const std::size_t value = sizeof(test<T>(0)); \
}; \
\
template <class T> \
struct TRAITS_PREFIX##_bool_is_true \
{ \
    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(TRAIT_NAME, \
FUNC_NAME) \
BOOST_INTRUSIVE_HAS_MEMBER_FUNC_CALLED(TRAIT_NAME##_ignore_signature, FUNC_NAME) \
\
\
template <typename Type, class> \
struct TRAIT_NAME \
: public TRAIT_NAME##_ignore_signature<Type> \
{}; \
//

} //namespace detail
} //namespace intrusive
} //namespace boost

#include <boost/intrusive/detail/config_end.hpp>

#endif //BOOST_INTRUSIVE_DETAIL_MPL_HPP
=====

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```
<html>  
<head>  
<meta http-equiv="Content-Type" content="text/html; charset=US-ASCII">  
<title>MPL Interoperability</title>  
<link 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 1: Boost.TypeTraits">  
<link rel="up" href="../../index.html" title="Chapter 1: Boost.TypeTraits">  
<link rel="prev" href="intrinsic.html" title="Support for Compiler Intrinsics">  
<link rel="next" href="examples.html" title="Examples">  
</head>  
<body bgcolor="white" text="black" link="#0000FF" vlink="#840084" alink="#0000FF">  
<table cellpadding="2" width="100%"><tr>  
<td valign="top"></td>  
<td align="center"><a href="../../index.html">Home</a></td>  
<td align="center"><a href="../../libs/libraries.htm">Libraries</a></td>  
<td align="center"><a href="http://www.boost.org/users/people.html">People</a></td>  
<td align="center"><a href="http://www.boost.org/users/faq.html">FAQ</a></td>  
<td align="center"><a href="../../more/index.htm">More</a></td>  
</tr></table>  
<hr>  
<div class="spirit-nav">  
<a accesskey="p" href="intrinsic.html"></a><a  
accesskey="u" href="../../index.html"></a><a accesskey="h"  
href="../../index.html"></a><a accesskey="n"  
href="examples.html"></a>  
</div>
```

```

<div class="section">
<div class="titlepage"><div><div><h2 class="title" style="clear: both">
<a name="boost_typedtraits.mpl"></a><a class="link" href="mpl.html" title="MPL Interoperability">MPL
Interoperability</a>
</h2></div></div></div>
<p>
All the value based traits in this library conform to MPL's requirements for
an <a href="http://www.boost.org/doc/refmanual/integral-constant.html" target="_top">Integral
Constant type</a>.
</p>
<p>
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.
</p>
</div>
<table xmlns:rev="http://www.cs.rpi.edu/~gregod/boost/tools/doc/revision" width="100%"><tr>
<td align="left"></td>
<td align="right"><div class="copyright-footer">Copyright © 2000, 2011 Adobe Systems Inc, David
Abrahams,
Frederic Bron, Steve Cleary, Beman Dawes, Aleksey Gurtovoy, Howard Hinnant,
Jesse Jones, Mat Marcus, Itay Maman, John Maddock, Alexander Nasonov, Thorsten
Ottosen, Roman Perepelitsa, Robert Ramey, Jeremy Siek, Robert Stewart and Steven
Watanabe<p>
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file LICENSE_1_0.txt or copy at <a href="http://www.boost.org/LICENSE_1_0.txt"
target="_top">http://www.boost.org/LICENSE_1_0.txt</a>)
</p>
</div></td>
</tr></table>
<hr>
<div class="spirit-nav">
<a accesskey="p" href="intrinsic.html"></a><a
accesskey="u" href="http://www.boost.org/doc/src/images/up.png" alt="Up"></a><a accesskey="h"
href="http://www.boost.org/doc/src/images/home.png" alt="Home"></a><a accesskey="n"
href="http://www.boost.org/doc/src/images/next.png" alt="Next"></a>
</div>
</body>
</html>

```

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Indiana University ()  
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This package was debianized by Vladimir Prus <ghost@cs.msu.su> on  
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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>\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"
"<pre><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"
"</pre>";

//
// input Information:
//
os << "<a name=\"input\"></a><h2>Input Information</h2>\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><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><h2>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>\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>\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>\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<table border=\"1\">\n <tr>\n <td><pre>"
    << i->second.first << "</pre></td>\n <td><pre>"
    << 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>\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-bsl\"></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><table border=\"1\">\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><td>" << ad->first << "</td><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></tr>\n";
```

```
  ++ad;
```

```
}
```

```
os << "</table>\n";
```

```
}
```

```
//
```

```
// output file dependency information:
```

```
//
```

```

os << "<H2><a name=\"depend\"></a>File Dependency Information</H2><BLOCKQUOTE><pre>\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()) || (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);
}
}

```

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```
/+\
+\ Copyright 1993-2002 Christopher Seiwald and Perforce Software, Inc.
\+/
```

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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.

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

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

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[article Copyright Test

[quickbook 1.5]

[copyright 1963-1965 Jane Doe, 2018 Joe Blow, John Coe]

[copyright 1977,1985 Someone else]

]

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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>1964</year> <year>1965</year> <holder>Jane Doe</holder>
```

```
</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>
```

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```
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<!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>
    <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>
[/=====]
```

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```

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Examples:

- adapted geometry types e.g. array, Boost.Polygon
- implemented file-format e.g. WKB
- implemented specific strategy or algorithm e.g. intersections

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```
<!--
```

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```

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```

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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"
```

```
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

```
<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>
<link href="tabs.css" rel="stylesheet" type="text/css"/>
<script type="text/javascript" src="jquery.js"></script>
<script type="text/javascript" src="dynsections.js"></script>
<link href="navtree.css" rel="stylesheet" type="text/css"/>
<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>
<link href="search/search.css" rel="stylesheet" type="text/css"/>
<script type="text/javascript" src="search/searchdata.js"></script>
<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>
<link 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>
<body>
<div id="top"><!-- do not remove this div, it is closed by doxygen! -->
<div id="titlearea">
<table cellspacing="0" cellpadding="0">
<tbody>

```

```

<tr style="height: 56px;">
  <td id="projectlogo"></td>
  <td style="padding-left: 0.5em;">
    <div id="projectname">Boost.Hana
    &#160;<span id="projectnumber">1.2.0</span>
    </div>
    <div id="projectbrief">Your standard library for metaprogramming</div>
  </td>
  <td>
    <div id="MSearchBox" class="MSearchBoxInactive">
      <span class="left">
        
        <input type="text" id="MSearchField" value="Search" accesskey="S"
          onfocus="searchBox.OnSearchFieldFocus(true)"
          onblur="searchBox.OnSearchFieldFocus(false)"
          onkeyup="searchBox.OnSearchFieldChange(event)"/>
      </span><span class="right">
        <a id="MSearchClose" href="javascript:searchBox.CloseResultsWindow()"></a>
      </span>
    </div>
  </td>
</tr>
</tbody>
</table>
</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;"
    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"
  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-
ext.html">External adapters</a></div></div> </div>
</div><!--header-->
  <div class="contents">
<a name="details" id="details"></a><h2 class="groupheader">Description</h2>
<p>Adapters for Boost.MPL containers. </p>
<table class="memberdecls">
<tr class="heading"><td colspan="2"><h2 class="groupheader"><a name="nested-classes"></a>
Classes</h2></td></tr>
<tr class="memitem:"><td class="memItemLeft" align="right" valign="top">struct &#160;</td><td
class="memItemRight" valign="bottom"><a class="el"
href="structboost_1_1mpl_1_1integral__c.html">boost::mpl::integral_c< T, v ></a></td></tr>
<tr class="memdesc:"><td class="mdescLeft">&#160;</td><td class="mdescRight">Adapter for IntegralConstants
from the Boost.MPL. <a href="structboost_1_1mpl_1_1integral__c.html#details">More...</a><br /></td></tr>
<tr class="separator:"><td class="memSeparator" colspan="2">&#160;</td></tr>
<tr class="memitem:"><td class="memItemLeft" align="right" valign="top">struct &#160;</td><td
class="memItemRight" valign="bottom"><a class="el" href="structboost_1_1mpl_1_1list.html">boost::mpl::list< T
></a></td></tr>
<tr class="memdesc:"><td class="mdescLeft">&#160;</td><td class="mdescRight">Adapter for Boost.MPL lists.
<a href="structboost_1_1mpl_1_1list.html#details">More...</a><br /></td></tr>
<tr class="separator:"><td class="memSeparator" colspan="2">&#160;</td></tr>
<tr class="memitem:"><td class="memItemLeft" align="right" valign="top">struct &#160;</td><td
class="memItemRight" valign="bottom"><a class="el"
href="structboost_1_1mpl_1_1vector.html">boost::mpl::vector< T ></a></td></tr>
<tr class="memdesc:"><td class="mdescLeft">&#160;</td><td class="mdescRight">Adapter for Boost.MPL
vectors. <a href="structboost_1_1mpl_1_1vector.html#details">More...</a><br /></td></tr>
<tr class="separator:"><td class="memSeparator" colspan="2">&#160;</td></tr>
</table>
</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! -->
<ul>
</ul>
</div>
</body>
</html>
```

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Bruce Barr (schmoost -at- yahoo.com) (See Boost list of Mon, 16 Aug 2004 15:06:43 -0500)  
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Cromwell D Enage (sponage -at- yahoo.com) (See Boost list message of August 12, 2004 11:49:13 AM EST)  
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Daniel Nuffer (dan -at- nuffer.name)  
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Gregory Colvin (gregory.colvin -at- oracle.com) (See Boost list message of Sat, 14 Aug 2004 10:57:00 +0100)  
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Herv Brnnimann (hbr -at- poly.edu)  
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John R Bandela (jbandela-at-ufl.edu)  
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Ronald Garcia (garcia -at- cs.indiana.edu) (Email to Andreas Huber, see change log)  
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Steve Cleary (Variant of Stephen Cleary)  
Sylvain Pion (Sylvain.Pion - at - sophia.inria.fr)  
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Thorsten Ottosen (nesotto - at - cs.auc.dk)  
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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 ---

```
var group__group_ext_mpl =
```

```
[  
  [ "integral_c", "structboost_1_1mpl_1_1integral__c.html", null ],  
  [ "list", "structboost_1_1mpl_1_1list.html", null ],  
  [ "vector", "structboost_1_1mpl_1_1vector.html", null ]  
];
```

```
<?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>
```

```
<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>
```

```
=====  
Copyright (c) 2007-2011 Barend Gehrels, Amsterdam, the Netherlands.
```

```
Copyright (c) 2008-2011 Bruno Lalande, Paris, France.
```

```
Copyright (c) 2009-2011 Mateusz Loskot, London, UK.
```

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```

```
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```

```
http://www.boost.org/LICENSE\_1\_0.txt)  
=====
```

```
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```

```
// Boost.Geometry (aka GGL, Generic Geometry Library)
```

```
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```

```
// Copyright (c) 2008-2011 Bruno Lalande, Paris, France.
```

```
// Copyright (c) 2009-2011 Mateusz Loskot, London, UK.
```

```
// Parts of Boost.Geometry are redesigned from Geodan's Geographic Library
```

```
// (geolib/GGL), copyright (c) 1995-2010 Geodan, Amsterdam, the Netherlands.
```

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```

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Examples:

- adapted geometry types e.g. array, Boost.Polygon
- implemented file-format e.g. WKB
- implemented specific strategy or algorithm e.g. intersections

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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>1964</year> <year>1965</year> <holder>Jane Doe</holder>  
</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>
```

## 1.11 protobuf 3.5.2

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- \* gzip/zlib I/O support.

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

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- \* Fixed initialization ordering problem in logging code.

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- \* Small patch improving performance of in Python serialization.

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

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

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- \* HPUX support.

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

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- \* 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.

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

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

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

# 1.12 curl 7.64.0

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## 1.13 cyrus-sasl 2.1.0

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/\*

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\*

\* An almost complete rewrite of MySpell for use by  
\* the Mozilla project has been developed by David Einstein  
\* (Deinst@world.std.com). David and I are now  
\* working on parallel development tracks to help  
\* our respective projects (Mozilla and OpenOffice.org  
\* and we will maintain full affix file and dictionary  
\* file compatibility and work on merging our versions  
\* 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  
\* Hungarian dictionary and who developed and contributed  
\* the code to support compound words in MySpell  
\* and fixed numerous problems with the encoding  
\* case conversion tables.

\*

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// sigslot.h: Signal/Slot classes

//

// Written by Sarah Thompson (sarah@telergy.com) 2002.

//

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/\*

\* SpanDSP - a series of DSP components for telephony

\*

\* g711.h - In line A-law and u-law conversion routines

\*

\* Written by Steve Underwood <[steveu@coppice.org](mailto:steveu@coppice.org)>

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```
*/
/*
* $Id: pa_memorybarrier.h 1240 2007-07-17 13:05:07Z bjornroche $
* Portable Audio I/O Library
* Memory barrier utilities
*
* Author: Bjorn Roche, XO Audio, LLC
*
* This program uses the PortAudio Portable Audio Library.
* For more information see: http://www.portaudio.com
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* license above.
*/

/*
* $Id: pa_ringbuffer.c 1421 2009-11-18 16:09:05Z bjornroche $
* Portable Audio I/O Library
* Ring Buffer utility.
*

```

\* Author: Phil Burk, <http://www.softsynth.com>  
\* modified for SMP safety on Mac OS X by Bjorn Roche  
\* modified for SMP safety on Linux by Leland Lucius  
\* also, allowed for const where possible  
\* modified for multiple-byte-sized data elements by Sven Fischer  
\*  
\* Note that this is safe only for a single-thread reader and a  
\* single-thread writer.  
\*  
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\* For more information see: <http://www.portaudio.com>  
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/\*  
\* Written by Wilco Dijkstra, 1996. The following email exchange establishes the  
\* license.  
\*  
\* From: Wilco Dijkstra <[Wilco.Dijkstra@ntlworld.com](mailto:Wilco.Dijkstra@ntlworld.com)>

\* Date: Fri, Jun 24, 2011 at 3:20 AM  
\* Subject: Re: sqrt routine  
\* To: Kevin Ma <kma@google.com>  
\* Hi Kevin,  
\* Thanks for asking. Those routines are public domain (originally posted to  
\* comp.sys.arm a long time ago), so you can use them freely for any purpose.  
\* Cheers,  
\* Wilco  
\*

\* ----- Original Message -----

\* From: "Kevin Ma" <kma@google.com>  
\* To: <Wilco.Dijkstra@ntlworld.com>  
\* Sent: Thursday, June 23, 2011 11:44 PM  
\* Subject: Fwd: sqrt routine

\* Hi Wilco,

\* I saw your sqrt routine from several web sites, including  
\* <http://www.finesse.demon.co.uk/steven/sqrt.html>.  
\* Just wonder if there's any copyright information with your Successive  
\* approximation routines, or if I can freely use it for any purpose.

\* Thanks.

\* Kevin

\*/

/\*

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\* Queen's Univ at Kingston (Canada)

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\* that everyone benefits.

\*/

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Volvett Zhang

Ling Zhu

James Zhu

Dong Zhang

Haibo Zhu

Huade Shi

```
include $(SRC_PATH)build/arch.mk
```

```
SHAREDLIBSUFFIX = so
```

```
SHAREDLIBSUFFIXFULLVER=$(SHAREDLIBSUFFIX).$(FULL_VERSION)
```

```
SHAREDLIBSUFFIXMAJORVER=$(SHAREDLIBSUFFIX).$(SHAREDLIB_MAJORVERSION)
```

```
SHLDFLAGS = -Wl,-soname,$(LIBPREFIX)$(PROJECT_NAME).$(SHAREDLIBSUFFIXMAJORVER)
```

```
CFLAGS += -fPIC -fstack-protector-all
```

```
LDFLAGS += -lpthread
```

```
STATIC_LDFLAGS += -lpthread -lm
```

```
ifeq ($(ASM_ARCH), x86)
```

```
ifeq ($(ARCH), x86_64)
```

```
ASMFLAGS += -f elf64
```

```
else
```

```
ASMFLAGS += -f elf
```

```
endif
```

```
endif
```

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# 1.27 open-ldap 2.4.53

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coderrules.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

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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.

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

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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.

We are required to state that

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## REFERENCES

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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://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

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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

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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 PBMPPLUS 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 PBMPPLUS/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

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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

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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](mailto:jpeg-info@uunet.uu.net).

## 1.31 easywsclient 1.0

### 1.31.1 Available under license :

The MIT License (MIT)

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## 1.32 websocketpp 0.8.2

### 1.32.1 Available under license :

Main Library:

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Bundled Libraries:

\*\*\*\*\* Base 64 Library (base64/base64.hpp) \*\*\*\*\*

base64.hpp is a repackaging of the base64.cpp and base64.h files into a single header suitable for use as a header only library. This conversion was done by Peter Thorson (webmaster@zaphoyd.com) in 2012. All modifications to the code are redistributed under the same license as the original, which is listed below.

base64.cpp and base64.h

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Ren Nyffenegger [rene.nyffenegger@adp-gmbh.ch](mailto:rene.nyffenegger@adp-gmbh.ch)

\*\*\*\*\* SHA1 Library (sha1/sha1.hpp) \*\*\*\*\*

sha1.hpp is a repackaging of the sha1.cpp and sha1.h files from the shallsha1 library (<http://code.google.com/p/smallsha1/>) into a single header suitable for use as a header only library. This conversion was done by Peter Thorson ([webmaster@zaphoyd.com](mailto:webmaster@zaphoyd.com)) in 2013. All modifications to the code are redistributed under the same license as the original, which is listed below.

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\*\*\*\*\* MD5 Library (common/md5.hpp) \*\*\*\*\*

md5.hpp is a reformulation of the md5.h and md5.c code from <http://www.opensource.apple.com/source/cups/cups-59/cups/md5.c> to allow it to function as a component of a header only library. This conversion was done by Peter Thorson ([webmaster@zaphoyd.com](mailto:webmaster@zaphoyd.com)) in 2012 for the WebSocket++ project. The changes are released under the same license as the original (listed below)

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L. Peter Deutsch  
ghost@aladdin.com

\*\*\*\*\* UTF8 Validation logic (utf8\_validation.hpp) \*\*\*\*\*  
utf8\_validation.hpp is adapted from code originally written by Bjoern Hoehrmann <bjoern@hoehrmann.de>. See <http://bjoern.hoehrmann.de/utf-8/decoder/dfa/> for details.

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# 1.33 qt 5.12.9

## 1.33.1 Available under license :

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Version 3, 29 June 2007

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includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

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## 1.34 rsamd5c++implementation 1.02

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MDDRIVER.C - test driver for MD2, MD4 and MD5

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## 1.35 breakpad 0.1

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## 1.36 blowfish++encryptionalgorithm 1.0

## 1.36.1 Available under license :

Regarding blowfishc++encryptionalgorithm, it is unpatented and royalty-free, and there is no license at all. Please take a look at: <https://www.schneier.com/academic/blowfish/>. From the link above, it shows:

The Blowfish Encryption Algorithm

Block cipher: 64-bit block

Variable key length: 32 bits to 448 bits

Designed by Bruce Schneier

Much faster than DES and IDEA

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Cryptography: scanning discontinued 2010-11-29 per Dan Gardner (dangardn)

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