#pragma line 1 "../../../../../../home/drsatya/Desktop/lab1/MAT\_PIPELINE\_2.cpp"

#pragma line 1 "../../../../../../home/drsatya/Desktop/lab1/MAT\_PIPELINE\_2.cpp" 1

#pragma line 1 "<built-in>" 1

#pragma line 1 "<built-in>" 3

#pragma line 155 "<built-in>" 3

#pragma line 1 "<command line>" 1

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma line 1 "/opt/Xilinx/Vivado\_HLS/2017.2/common/technology/autopilot/etc/autopilot\_ssdm\_op.h" 1

/\* autopilot\_ssdm\_op.h\*/

/\*

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#-

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#- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#pragma empty\_line

\*

\* $Id$

\*/

#pragma line 145 "/opt/Xilinx/Vivado\_HLS/2017.2/common/technology/autopilot/etc/autopilot\_ssdm\_op.h"

/\*#define AP\_SPEC\_ATTR \_\_attribute\_\_ ((pure))\*/

//adu: patched

#pragma line 156 "/opt/Xilinx/Vivado\_HLS/2017.2/common/technology/autopilot/etc/autopilot\_ssdm\_op.h"

extern "C" {

#pragma empty\_line

/\*\*\*\*\*\* SSDM Intrinsics: OPERATIONS \*\*\*/

// Interface operations

#pragma empty\_line

//typedef unsigned int \_\_attribute\_\_ ((bitwidth(1))) \_uint1\_;

typedef bool \_uint1\_;

#pragma empty\_line

void \_ssdm\_op\_IfRead(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_IfWrite(...) \_\_attribute\_\_ ((nothrow));

\_uint1\_ \_ssdm\_op\_IfNbRead(...) \_\_attribute\_\_ ((nothrow));

\_uint1\_ \_ssdm\_op\_IfNbWrite(...) \_\_attribute\_\_ ((nothrow));

\_uint1\_ \_ssdm\_op\_IfCanRead(...) \_\_attribute\_\_ ((nothrow));

\_uint1\_ \_ssdm\_op\_IfCanWrite(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

// Stream Intrinsics

void \_ssdm\_StreamRead(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_StreamWrite(...) \_\_attribute\_\_ ((nothrow));

\_uint1\_ \_ssdm\_StreamNbRead(...) \_\_attribute\_\_ ((nothrow));

\_uint1\_ \_ssdm\_StreamNbWrite(...) \_\_attribute\_\_ ((nothrow));

\_uint1\_ \_ssdm\_StreamCanRead(...) \_\_attribute\_\_ ((nothrow));

\_uint1\_ \_ssdm\_StreamCanWrite(...) \_\_attribute\_\_ ((nothrow));

unsigned \_ssdm\_StreamSize(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

// Misc

void \_ssdm\_op\_MemShiftRead(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_Wait(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_Poll(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_Return(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

/\* SSDM Intrinsics: SPECIFICATIONS \*/

void \_ssdm\_op\_SpecSynModule(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecTopModule(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecProcessDecl(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecProcessDef(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecPort(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecConnection(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecChannel(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecSensitive(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecModuleInst(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecPortMap(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_SpecReset(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_SpecPlatform(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecClockDomain(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecPowerDomain(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

int \_ssdm\_op\_SpecRegionBegin(...) \_\_attribute\_\_ ((nothrow));

int \_ssdm\_op\_SpecRegionEnd(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_SpecLoopName(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_SpecLoopTripCount(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

int \_ssdm\_op\_SpecStateBegin(...) \_\_attribute\_\_ ((nothrow));

int \_ssdm\_op\_SpecStateEnd(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_SpecInterface(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_SpecPipeline(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecDataflowPipeline(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

#pragma empty\_line

void \_ssdm\_op\_SpecLatency(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecParallel(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecProtocol(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecOccurrence(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_SpecResource(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecResourceLimit(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecCHCore(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecFUCore(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecIFCore(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecIPCore(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecKeepValue(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecMemCore(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_SpecExt(...) \_\_attribute\_\_ ((nothrow));

/\*void\* \_ssdm\_op\_SpecProcess(...) SSDM\_SPEC\_ATTR;

void\* \_ssdm\_op\_SpecEdge(...) SSDM\_SPEC\_ATTR; \*/

#pragma empty\_line

/\* Presynthesis directive functions \*/

void \_ssdm\_SpecArrayDimSize(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_RegionBegin(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_RegionEnd(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_Unroll(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_UnrollRegion(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_InlineAll(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_InlineLoop(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_Inline(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_InlineSelf(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_InlineRegion(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_SpecArrayMap(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_SpecArrayPartition(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_SpecArrayReshape(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_SpecStream(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_SpecExpr(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_SpecExprBalance(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_SpecDependence(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_SpecLoopMerge(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_SpecLoopFlatten(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_SpecLoopRewind(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_SpecFuncInstantiation(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_SpecFuncBuffer(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_SpecFuncExtract(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_SpecConstant(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_DataPack(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_SpecDataPack(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_ssdm\_op\_SpecBitsMap(...) \_\_attribute\_\_ ((nothrow));

void \_ssdm\_op\_SpecLicense(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

void \_\_xilinx\_ip\_top(...) \_\_attribute\_\_ ((nothrow));

#pragma empty\_line

#pragma empty\_line

}

#pragma line 413 "/opt/Xilinx/Vivado\_HLS/2017.2/common/technology/autopilot/etc/autopilot\_ssdm\_op.h"

/\*#define \_ssdm\_op\_WaitUntil(X) while (!(X)) \_ssdm\_op\_Wait(1);

#define \_ssdm\_op\_Delayed(X) X \*/

#pragma line 427 "/opt/Xilinx/Vivado\_HLS/2017.2/common/technology/autopilot/etc/autopilot\_ssdm\_op.h"

// 67d7842dbbe25473c3c32b93c0da8047785f30d78e8a024de1b57352245f9689

#pragma line 7 "<command line>" 2

#pragma line 1 "<built-in>" 2

#pragma line 1 "../../../../../../home/drsatya/Desktop/lab1/MAT\_PIPELINE\_2.cpp" 2

#pragma empty\_line

#pragma line 1 "../../../../../../home/drsatya/Desktop/lab1/matrixmul.h" 1

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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// \_\_\_\_ \_\_\_\_

// / /\/ /

// /\_\_\_/ \ / Vendor: Xilinx

// \ \ \/ Version: %version

// \ \ Application: AutoESL

// / / Filename: matrixmul.h

// /\_\_\_/ /\ Date Last Modified: $Date: 2012/3/30 18:53:07 $

// \ \ / \ Date Created: Fri Mar 30 2012

// \\_\_\_\/\\_\_\_//

#pragma empty\_line

//Device: All

//Design Name: maxtrixmul1

//Purpose:

// This is the header for the matrixmul.cpp design.

//Reference:

//Revision History:

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma line 1 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/cmath" 1 3

// -\*- C++ -\*- C forwarding header.

#pragma empty\_line

// Copyright (C) 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005,

// 2006, 2007, 2008, 2009, 2010, 2011

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// see the files COPYING3 and COPYING.RUNTIME respectively. If not, see

// <http://www.gnu.org/licenses/>.

#pragma empty\_line

/\*\* @file include/cmath

\* This is a Standard C++ Library file. You should @c \#include this file

\* in your programs, rather than any of the @a \*.h implementation files.

\*

\* This is the C++ version of the Standard C Library header @c math.h,

\* and its contents are (mostly) the same as that header, but are all

\* contained in the namespace @c std (except for names which are defined

\* as macros in C).

\*/

#pragma empty\_line

//

// ISO C++ 14882: 26.5 C library

//

#pragma empty\_line

#pragma empty\_line

#pragma line 41 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/cmath" 3

#pragma empty\_line

#pragma line 1 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 1 3

// Predefined symbols and macros -\*- C++ -\*-

#pragma empty\_line

// Copyright (C) 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005,

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// see the files COPYING3 and COPYING.RUNTIME respectively. If not, see

// <http://www.gnu.org/licenses/>.

#pragma empty\_line

/\*\* @file bits/c++config.h

\* This is an internal header file, included by other library headers.

\* Do not attempt to use it directly. @headername{iosfwd}

\*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

// The current version of the C++ library in compressed ISO date format.

#pragma empty\_line

#pragma empty\_line

// Macros for various attributes.

// \_GLIBCXX\_PURE

// \_GLIBCXX\_CONST

// \_GLIBCXX\_NORETURN

// \_GLIBCXX\_NOTHROW

// \_GLIBCXX\_VISIBILITY

#pragma line 63 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 3

// Macros for visibility attributes.

// \_GLIBCXX\_HAVE\_ATTRIBUTE\_VISIBILITY

// \_GLIBCXX\_VISIBILITY

#pragma line 76 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 3

// Macros for deprecated attributes.

// \_GLIBCXX\_USE\_DEPRECATED

// \_GLIBCXX\_DEPRECATED

#pragma line 91 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 3

// Macro for constexpr, to support in mixed 03/0x mode.

#pragma line 102 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 3

// Macro for extern template, ie controling template linkage via use

// of extern keyword on template declaration. As documented in the g++

// manual, it inhibits all implicit instantiations and is used

// throughout the library to avoid multiple weak definitions for

// required types that are already explicitly instantiated in the

// library binary. This substantially reduces the binary size of

// resulting executables.

// Special case: \_GLIBCXX\_EXTERN\_TEMPLATE == -1 disallows extern

// templates only in basic\_string, thus activating its debug-mode

// checks even at -O0.

#pragma empty\_line

#pragma empty\_line

/\*

Outline of libstdc++ namespaces.

#pragma empty\_line

namespace std

{

namespace \_\_debug { }

namespace \_\_parallel { }

namespace \_\_profile { }

namespace \_\_cxx1998 { }

#pragma empty\_line

namespace \_\_detail { }

#pragma empty\_line

namespace rel\_ops { }

#pragma empty\_line

namespace tr1

{

namespace placeholders { }

namespace regex\_constants { }

namespace \_\_detail { }

}

#pragma empty\_line

namespace decimal { }

#pragma empty\_line

namespace chrono { }

namespace placeholders { }

namespace regex\_constants { }

namespace this\_thread { }

}

#pragma empty\_line

namespace abi { }

#pragma empty\_line

namespace \_\_gnu\_cxx

{

namespace \_\_detail { }

}

#pragma empty\_line

For full details see:

http://gcc.gnu.org/onlinedocs/libstdc++/latest-doxygen/namespaces.html

\*/

namespace std

{

typedef long unsigned int size\_t;

typedef long int ptrdiff\_t;

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

}

#pragma empty\_line

#pragma empty\_line

// Defined if inline namespaces are used for versioning.

#pragma empty\_line

#pragma empty\_line

// Inline namespace for symbol versioning.

#pragma line 208 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 3

// Inline namespaces for special modes: debug, parallel, profile.

#pragma line 255 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 3

// Macros for namespace scope. Either namespace std:: or the name

// of some nested namespace within it corresponding to the active mode.

// \_GLIBCXX\_STD\_A

// \_GLIBCXX\_STD\_C

//

// Macros for opening/closing conditional namespaces.

// \_GLIBCXX\_BEGIN\_NAMESPACE\_ALGO

// \_GLIBCXX\_END\_NAMESPACE\_ALGO

// \_GLIBCXX\_BEGIN\_NAMESPACE\_CONTAINER

// \_GLIBCXX\_END\_NAMESPACE\_CONTAINER

#pragma line 307 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 3

// GLIBCXX\_ABI Deprecated

// Define if compatibility should be provided for -mlong-double-64.

#pragma empty\_line

#pragma empty\_line

// Inline namespace for long double 128 mode.

#pragma line 326 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 3

// Assert.

#pragma line 352 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 3

// Macros for race detectors.

// \_GLIBCXX\_SYNCHRONIZATION\_HAPPENS\_BEFORE(A) and

// \_GLIBCXX\_SYNCHRONIZATION\_HAPPENS\_AFTER(A) should be used to explain

// atomic (lock-free) synchronization to race detectors:

// the race detector will infer a happens-before arc from the former to the

// latter when they share the same argument pointer.

//

// The most frequent use case for these macros (and the only case in the

// current implementation of the library) is atomic reference counting:

// void \_M\_remove\_reference()

// {

// \_GLIBCXX\_SYNCHRONIZATION\_HAPPENS\_BEFORE(&this->\_M\_refcount);

// if (\_\_gnu\_cxx::\_\_exchange\_and\_add\_dispatch(&this->\_M\_refcount, -1) <= 0)

// {

// \_GLIBCXX\_SYNCHRONIZATION\_HAPPENS\_AFTER(&this->\_M\_refcount);

// \_M\_destroy(\_\_a);

// }

// }

// The annotations in this example tell the race detector that all memory

// accesses occurred when the refcount was positive do not race with

// memory accesses which occurred after the refcount became zero.

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

// Macros for C linkage: define extern "C" linkage only when using C++.

#pragma line 390 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 3

// First includes.

#pragma empty\_line

// Pick up any OS-specific definitions.

#pragma empty\_line

#pragma line 1 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/os\_defines.h" 1 3

// Specific definitions for GNU/Linux -\*- C++ -\*-

#pragma empty\_line

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#pragma empty\_line

/\*\* @file bits/os\_defines.h

\* This is an internal header file, included by other library headers.

\* Do not attempt to use it directly. @headername{iosfwd}

\*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

// System-specific #define, typedefs, corrections, etc, go here. This

// file will come before all others.

#pragma empty\_line

// This keeps isanum, et al from being propagated as macros.

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma line 1 "/usr/include/features.h" 1 3 4

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02111-1307 USA. \*/

#pragma empty\_line

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/\* These are defined by the user (or the compiler)

to specify the desired environment:

#pragma empty\_line

\_\_STRICT\_ANSI\_\_ ISO Standard C.

\_ISOC99\_SOURCE Extensions to ISO C89 from ISO C99.

\_POSIX\_SOURCE IEEE Std 1003.1.

\_POSIX\_C\_SOURCE If ==1, like \_POSIX\_SOURCE; if >=2 add IEEE Std 1003.2;

if >=199309L, add IEEE Std 1003.1b-1993;

if >=199506L, add IEEE Std 1003.1c-1995;

if >=200112L, all of IEEE 1003.1-2004

if >=200809L, all of IEEE 1003.1-2008

\_XOPEN\_SOURCE Includes POSIX and XPG things. Set to 500 if

Single Unix conformance is wanted, to 600 for the

sixth revision, to 700 for the seventh revision.

\_XOPEN\_SOURCE\_EXTENDED XPG things and X/Open Unix extensions.

\_LARGEFILE\_SOURCE Some more functions for correct standard I/O.

\_LARGEFILE64\_SOURCE Additional functionality from LFS for large files.

\_FILE\_OFFSET\_BITS=N Select default filesystem interface.

\_BSD\_SOURCE ISO C, POSIX, and 4.3BSD things.

\_SVID\_SOURCE ISO C, POSIX, and SVID things.

\_ATFILE\_SOURCE Additional \*at interfaces.

\_GNU\_SOURCE All of the above, plus GNU extensions.

\_REENTRANT Select additionally reentrant object.

\_THREAD\_SAFE Same as \_REENTRANT, often used by other systems.

\_FORTIFY\_SOURCE If set to numeric value > 0 additional security

measures are defined, according to level.

#pragma empty\_line

The `-ansi' switch to the GNU C compiler defines \_\_STRICT\_ANSI\_\_.

If none of these are defined, the default is to have \_SVID\_SOURCE,

\_BSD\_SOURCE, and \_POSIX\_SOURCE set to one and \_POSIX\_C\_SOURCE set to

200112L. If more than one of these are defined, they accumulate.

For example \_\_STRICT\_ANSI\_\_, \_POSIX\_SOURCE and \_POSIX\_C\_SOURCE

together give you ISO C, 1003.1, and 1003.2, but nothing else.

#pragma empty\_line

These are defined by this file and are used by the

header files to decide what to declare or define:

#pragma empty\_line

\_\_USE\_ISOC99 Define ISO C99 things.

\_\_USE\_ISOC95 Define ISO C90 AMD1 (C95) things.

\_\_USE\_POSIX Define IEEE Std 1003.1 things.

\_\_USE\_POSIX2 Define IEEE Std 1003.2 things.

\_\_USE\_POSIX199309 Define IEEE Std 1003.1, and .1b things.

\_\_USE\_POSIX199506 Define IEEE Std 1003.1, .1b, .1c and .1i things.

\_\_USE\_XOPEN Define XPG things.

\_\_USE\_XOPEN\_EXTENDED Define X/Open Unix things.

\_\_USE\_UNIX98 Define Single Unix V2 things.

\_\_USE\_XOPEN2K Define XPG6 things.

\_\_USE\_XOPEN2KXSI Define XPG6 XSI things.

\_\_USE\_XOPEN2K8 Define XPG7 things.

\_\_USE\_XOPEN2K8XSI Define XPG7 XSI things.

\_\_USE\_LARGEFILE Define correct standard I/O things.

\_\_USE\_LARGEFILE64 Define LFS things with separate names.

\_\_USE\_FILE\_OFFSET64 Define 64bit interface as default.

\_\_USE\_BSD Define 4.3BSD things.

\_\_USE\_SVID Define SVID things.

\_\_USE\_MISC Define things common to BSD and System V Unix.

\_\_USE\_ATFILE Define \*at interfaces and AT\_\* constants for them.

\_\_USE\_GNU Define GNU extensions.

\_\_USE\_REENTRANT Define reentrant/thread-safe \*\_r functions.

\_\_USE\_FORTIFY\_LEVEL Additional security measures used, according to level.

\_\_FAVOR\_BSD Favor 4.3BSD things in cases of conflict.

#pragma empty\_line

The macros `\_\_GNU\_LIBRARY\_\_', `\_\_GLIBC\_\_', and `\_\_GLIBC\_MINOR\_\_' are

defined by this file unconditionally. `\_\_GNU\_LIBRARY\_\_' is provided

only for compatibility. All new code should use the other symbols

to test for features.

#pragma empty\_line

All macros listed above as possibly being defined by this file are

explicitly undefined if they are not explicitly defined.

Feature-test macros that are not defined by the user or compiler

but are implied by the other feature-test macros defined (or by the

lack of any definitions) are defined by the file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Undefine everything, so we get a clean slate. \*/

#pragma line 124 "/usr/include/features.h" 3 4

/\* Suppress kernel-name space pollution unless user expressedly asks

for it. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Always use ISO C things. \*/

#pragma empty\_line

#pragma empty\_line

/\* Convenience macros to test the versions of glibc and gcc.

Use them like this:

#if \_\_GNUC\_PREREQ (2,8)

... code requiring gcc 2.8 or later ...

#endif

Note - they won't work for gcc1 or glibc1, since the \_MINOR macros

were not defined then. \*/

#pragma line 148 "/usr/include/features.h" 3 4

/\* If \_BSD\_SOURCE was defined by the user, favor BSD over POSIX. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* If \_GNU\_SOURCE was defined by the user, turn on all the other features. \*/

#pragma line 179 "/usr/include/features.h" 3 4

/\* If nothing (other than \_GNU\_SOURCE) is defined,

define \_BSD\_SOURCE and \_SVID\_SOURCE. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* This is to enable the ISO C99 extension. Also recognize the old macro

which was used prior to the standard acceptance. This macro will

eventually go away and the features enabled by default once the ISO C99

standard is widely adopted. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* This is to enable the ISO C90 Amendment 1:1995 extension. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* If none of the ANSI/POSIX macros are defined, use POSIX.1 and POSIX.2

(and IEEE Std 1003.1b-1993 unless \_XOPEN\_SOURCE is defined). \*/

#pragma line 323 "/usr/include/features.h" 3 4

/\* Define \_\_STDC\_IEC\_559\_\_ and other similar macros. \*/

#pragma empty\_line

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/predefs.h" 1 3 4

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Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA

02111-1307 USA. \*/

#pragma line 26 "/usr/include/x86\_64-linux-gnu/bits/predefs.h" 3 4

/\* We do support the IEC 559 math functionality, real and complex. \*/

#pragma line 325 "/usr/include/features.h" 2 3 4

#pragma empty\_line

/\* wchar\_t uses ISO 10646-1 (2nd ed., published 2000-09-15) / Unicode 3.1. \*/

#pragma empty\_line

#pragma empty\_line

/\* This macro indicates that the installed library is the GNU C Library.

For historic reasons the value now is 6 and this will stay from now

on. The use of this variable is deprecated. Use \_\_GLIBC\_\_ and

\_\_GLIBC\_MINOR\_\_ now (see below) when you want to test for a specific

GNU C library version and use the values in <gnu/lib-names.h> to get

the sonames of the shared libraries. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Major and minor version number of the GNU C library package. Use

these macros to test for features in specific releases. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Decide whether a compiler supports the long long datatypes. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* This is here only because every header file already includes this one. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma line 1 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 1 3 4

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Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA

02111-1307 USA. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* We are almost always included from features.h. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* The GNU libc does not support any K&R compilers or the traditional mode

of ISO C compilers anymore. Check for some of the combinations not

anymore supported. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Some user header file might have defined this before. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* All functions, except those with callbacks or those that

synchronize memory, are leaf functions. \*/

#pragma line 51 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\* GCC can always grok prototypes. For C++ programs we add throw()

to help it optimize the function calls. But this works only with

gcc 2.8.x and egcs. For gcc 3.2 and up we even mark C functions

as non-throwing using a function attribute since programs can use

the -fexceptions options for C code as well. \*/

#pragma line 86 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\* These two macros are not used in glibc anymore. They are kept here

only because some other projects expect the macros to be defined. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* For these things, GCC behaves the ANSI way normally,

and the non-ANSI way under -traditional. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* This is not a typedef so `const \_\_ptr\_t' does the right thing. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* C++ needs to know that types and declarations are C, not C++. \*/

#pragma line 112 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\* The standard library needs the functions from the ISO C90 standard

in the std namespace. At the same time we want to be safe for

future changes and we include the ISO C99 code in the non-standard

namespace \_\_c99. The C++ wrapper header take case of adding the

definitions to the global namespace. \*/

#pragma line 125 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\* For compatibility we do not add the declarations into any

namespace. They will end up in the global namespace which is what

old code expects. \*/

#pragma line 137 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\* Support for bounded pointers. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Fortify support. \*/

#pragma line 161 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\* Support for flexible arrays. \*/

#pragma empty\_line

/\* GCC 2.97 supports C99 flexible array members. \*/

#pragma line 179 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\* \_\_asm\_\_ ("xyz") is used throughout the headers to rename functions

at the assembly language level. This is wrapped by the \_\_REDIRECT

macro, in order to support compilers that can do this some other

way. When compilers don't support asm-names at all, we have to do

preprocessor tricks instead (which don't have exactly the right

semantics, but it's the best we can do).

#pragma empty\_line

Example:

int \_\_REDIRECT(setpgrp, (\_\_pid\_t pid, \_\_pid\_t pgrp), setpgid); \*/

#pragma line 206 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\*

#elif \_\_SOME\_OTHER\_COMPILER\_\_

#pragma empty\_line

# define \_\_REDIRECT(name, proto, alias) name proto; \

\_Pragma("let " #name " = " #alias)

\*/

#pragma empty\_line

#pragma empty\_line

/\* GCC has various useful declarations that can be made with the

`\_\_attribute\_\_' syntax. All of the ways we use this do fine if

they are omitted for compilers that don't understand it. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* At some point during the gcc 2.96 development the `malloc' attribute

for functions was introduced. We don't want to use it unconditionally

(although this would be possible) since it generates warnings. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* At some point during the gcc 2.96 development the `pure' attribute

for functions was introduced. We don't want to use it unconditionally

(although this would be possible) since it generates warnings. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* This declaration tells the compiler that the value is constant. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* At some point during the gcc 3.1 development the `used' attribute

for functions was introduced. We don't want to use it unconditionally

(although this would be possible) since it generates warnings. \*/

#pragma line 257 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\* gcc allows marking deprecated functions. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* At some point during the gcc 2.8 development the `format\_arg' attribute

for functions was introduced. We don't want to use it unconditionally

(although this would be possible) since it generates warnings.

If several `format\_arg' attributes are given for the same function, in

gcc-3.0 and older, all but the last one are ignored. In newer gccs,

all designated arguments are considered. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* At some point during the gcc 2.97 development the `strfmon' format

attribute for functions was introduced. We don't want to use it

unconditionally (although this would be possible) since it

generates warnings. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* The nonull function attribute allows to mark pointer parameters which

must not be NULL. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* If fortification mode, we warn about unused results of certain

function calls which can lead to problems. \*/

#pragma line 310 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\* Forces a function to be always inlined. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* GCC 4.3 and above with -std=c99 or -std=gnu99 implements ISO C99

inline semantics, unless -fgnu89-inline is used. \*/

#pragma line 340 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

/\* GCC 4.3 and above allow passing all anonymous arguments of an

\_\_extern\_always\_inline function to some other vararg function. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* It is possible to compile containing GCC extensions even if GCC is

run in pedantic mode if the uses are carefully marked using the

`\_\_extension\_\_' keyword. But this is not generally available before

version 2.8. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* \_\_restrict is known in EGCS 1.2 and above. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* ISO C99 also allows to declare arrays as non-overlapping. The syntax is

array\_name[restrict]

GCC 3.1 supports this. \*/

#pragma line 378 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 3 4

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/wordsize.h" 1 3 4

/\* Determine the wordsize from the preprocessor defines. \*/

#pragma line 379 "/usr/include/x86\_64-linux-gnu/sys/cdefs.h" 2 3 4

#pragma line 358 "/usr/include/features.h" 2 3 4

#pragma empty\_line

#pragma empty\_line

/\* If we don't have \_\_REDIRECT, prototypes will be missing if

\_\_USE\_FILE\_OFFSET64 but not \_\_USE\_LARGEFILE[64]. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Decide whether we can define 'extern inline' functions in headers. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* There are some functions that must be declared 'extern inline' even with

-Os when building LIBC, or they'll end up undefined. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* This is here only because every header file already includes this one.

Get the definitions of all the appropriate `\_\_stub\_FUNCTION' symbols.

<gnu/stubs.h> contains `#define \_\_stub\_FUNCTION' when FUNCTION is a stub

that will always return failure (and set errno to ENOSYS). \*/

#pragma empty\_line

#pragma line 1 "/usr/include/x86\_64-linux-gnu/gnu/stubs.h" 1 3 4

/\* This file selects the right generated file of `\_\_stub\_FUNCTION' macros

based on the architecture being compiled for. \*/

#pragma empty\_line

#pragma empty\_line

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/wordsize.h" 1 3 4

/\* Determine the wordsize from the preprocessor defines. \*/

#pragma line 5 "/usr/include/x86\_64-linux-gnu/gnu/stubs.h" 2 3 4

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma line 1 "/usr/include/x86\_64-linux-gnu/gnu/stubs-64.h" 1 3 4

/\* This file is automatically generated.

It defines a symbol `\_\_stub\_FUNCTION' for each function

in the C library which is a stub, meaning it will fail

every time called, usually setting errno to ENOSYS. \*/

#pragma line 10 "/usr/include/x86\_64-linux-gnu/gnu/stubs.h" 2 3 4

#pragma line 390 "/usr/include/features.h" 2 3 4

#pragma line 41 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/os\_defines.h" 2 3

#pragma line 394 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 2 3

#pragma empty\_line

// Pick up any CPU-specific definitions.

#pragma empty\_line

#pragma line 1 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/cpu\_defines.h" 1 3

// Specific definitions for generic platforms -\*- C++ -\*-

#pragma empty\_line

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#pragma empty\_line

/\*\* @file bits/cpu\_defines.h

\* This is an internal header file, included by other library headers.

\* Do not attempt to use it directly. @headername{iosfwd}

\*/

#pragma line 397 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/x86\_64-unknown-linux-gnu/bits/c++config.h" 2 3

#pragma empty\_line

// If platform uses neither visibility nor psuedo-visibility,

// specify empty default for namespace annotation macros.

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

// Certain function definitions that are meant to be overridable from

// user code are decorated with this macro. For some targets, this

// macro causes these definitions to be weak.

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

// The remainder of the prewritten config is automatic; all the

// user hooks are listed above.

#pragma empty\_line

// Create a boolean flag to be used to determine if --fast-math is set.

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

// This marks string literals in header files to be extracted for eventual

// translation. It is primarily used for messages in thrown exceptions; see

// src/functexcept.cc. We use \_\_N because the more traditional \_N is used

// for something else under certain OSes (see BADNAMES).

#pragma empty\_line

#pragma empty\_line

// For example, <windows.h> is known to #define min and max as macros...

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

// End of prewritten config; the settings discovered at configure time follow.

/\* config.h. Generated from config.h.in by configure. \*/

/\* config.h.in. Generated from configure.ac by autoheader. \*/

#pragma empty\_line

/\* Define to 1 if you have the `acosf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `acosl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `asinf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `asinl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if the target assembler supports .symver directive. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `atan2f' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `atan2l' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `atanf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `atanl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if the target assembler supports thread-local storage. \*/

/\* #undef \_GLIBCXX\_HAVE\_CC\_TLS \*/

#pragma empty\_line

/\* Define to 1 if you have the `ceilf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `ceill' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <complex.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `cosf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `coshf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `coshl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `cosl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <dlfcn.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if EBADMSG exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if ECANCELED exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if EIDRM exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <endian.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if ENODATA exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if ENOLINK exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if ENOSR exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if ENOSTR exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if ENOTRECOVERABLE exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if ENOTSUP exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if EOVERFLOW exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if EOWNERDEAD exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if EPROTO exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if ETIME exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if ETXTBSY exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <execinfo.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `expf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `expl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `fabsf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `fabsl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <fenv.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `finite' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `finitef' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `finitel' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <float.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `floorf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `floorl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `fmodf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `fmodl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `fpclass' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_FPCLASS \*/

#pragma empty\_line

/\* Define to 1 if you have the <fp.h> header file. \*/

/\* #undef \_GLIBCXX\_HAVE\_FP\_H \*/

#pragma empty\_line

/\* Define to 1 if you have the `frexpf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `frexpl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if \_Unwind\_GetIPInfo is available. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if gthr-default.h exists (meaning that threading support is

enabled). \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `hypot' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `hypotf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `hypotl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if you have the iconv() function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <ieeefp.h> header file. \*/

/\* #undef \_GLIBCXX\_HAVE\_IEEEFP\_H \*/

#pragma empty\_line

/\* Define if int64\_t is available in <stdint.h>. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if int64\_t is a long. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if int64\_t is a long long. \*/

/\* #undef \_GLIBCXX\_HAVE\_INT64\_T\_LONG\_LONG \*/

#pragma empty\_line

/\* Define to 1 if you have the <inttypes.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `isinf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `isinff' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `isinfl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `isnan' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `isnanf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `isnanl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Defined if iswblank exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if LC\_MESSAGES is available in <locale.h>. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `ldexpf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `ldexpl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <libintl.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Only used in build directory testsuite\_hooks.h. \*/

#pragma empty\_line

#pragma empty\_line

/\* Only used in build directory testsuite\_hooks.h. \*/

#pragma empty\_line

#pragma empty\_line

/\* Only used in build directory testsuite\_hooks.h. \*/

#pragma empty\_line

#pragma empty\_line

/\* Only used in build directory testsuite\_hooks.h. \*/

#pragma empty\_line

#pragma empty\_line

/\* Only used in build directory testsuite\_hooks.h. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if futex syscall is available. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <locale.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `log10f' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `log10l' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `logf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `logl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <machine/endian.h> header file. \*/

/\* #undef \_GLIBCXX\_HAVE\_MACHINE\_ENDIAN\_H \*/

#pragma empty\_line

/\* Define to 1 if you have the <machine/param.h> header file. \*/

/\* #undef \_GLIBCXX\_HAVE\_MACHINE\_PARAM\_H \*/

#pragma empty\_line

/\* Define if mbstate\_t exists in wchar.h. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <memory.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `modf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `modff' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `modfl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <nan.h> header file. \*/

/\* #undef \_GLIBCXX\_HAVE\_NAN\_H \*/

#pragma empty\_line

/\* Define if poll is available in <poll.h>. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `powf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `powl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `qfpclass' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_QFPCLASS \*/

#pragma empty\_line

/\* Define to 1 if you have the `setenv' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `sincos' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `sincosf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `sincosl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `sinf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `sinhf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `sinhl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `sinl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `sqrtf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `sqrtl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <stdbool.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <stdint.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <stdlib.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if strerror\_l is available in <string.h>. \*/

/\* #undef \_GLIBCXX\_HAVE\_STRERROR\_L \*/

#pragma empty\_line

/\* Define if strerror\_r is available in <string.h>. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <strings.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <string.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `strtof' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `strtold' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if strxfrm\_l is available in <string.h>. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if the target runtime linker supports binding the same symbol

to different versions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <sys/filio.h> header file. \*/

/\* #undef \_GLIBCXX\_HAVE\_SYS\_FILIO\_H \*/

#pragma empty\_line

/\* Define to 1 if you have the <sys/ioctl.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <sys/ipc.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <sys/isa\_defs.h> header file. \*/

/\* #undef \_GLIBCXX\_HAVE\_SYS\_ISA\_DEFS\_H \*/

#pragma empty\_line

/\* Define to 1 if you have the <sys/machine.h> header file. \*/

/\* #undef \_GLIBCXX\_HAVE\_SYS\_MACHINE\_H \*/

#pragma empty\_line

/\* Define to 1 if you have the <sys/param.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <sys/resource.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <sys/sem.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <sys/stat.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <sys/time.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <sys/types.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <sys/uio.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if S\_IFREG is available in <sys/stat.h>. \*/

/\* #undef \_GLIBCXX\_HAVE\_S\_IFREG \*/

#pragma empty\_line

/\* Define if S\_IFREG is available in <sys/stat.h>. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `tanf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `tanhf' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `tanhl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `tanl' function. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <tgmath.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if the target supports thread-local storage. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <unistd.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Defined if vfwscanf exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Defined if vswscanf exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Defined if vwscanf exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <wchar.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Defined if wcstof exists. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the <wctype.h> header file. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if writev is available in <sys/uio.h>. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if you have the `\_acosf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ACOSF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_acosl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ACOSL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_asinf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ASINF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_asinl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ASINL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_atan2f' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ATAN2F \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_atan2l' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ATAN2L \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_atanf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ATANF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_atanl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ATANL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_ceilf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_CEILF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_ceill' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_CEILL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_cosf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_COSF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_coshf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_COSHF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_coshl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_COSHL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_cosl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_COSL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_expf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_EXPF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_expl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_EXPL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_fabsf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FABSF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_fabsl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FABSL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_finite' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FINITE \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_finitef' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FINITEF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_finitel' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FINITEL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_floorf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FLOORF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_floorl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FLOORL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_fmodf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FMODF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_fmodl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FMODL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_fpclass' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FPCLASS \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_frexpf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FREXPF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_frexpl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_FREXPL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_hypot' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_HYPOT \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_hypotf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_HYPOTF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_hypotl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_HYPOTL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_isinf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ISINF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_isinff' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ISINFF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_isinfl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ISINFL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_isnan' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ISNAN \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_isnanf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ISNANF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_isnanl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_ISNANL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_ldexpf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_LDEXPF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_ldexpl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_LDEXPL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_log10f' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_LOG10F \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_log10l' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_LOG10L \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_logf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_LOGF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_logl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_LOGL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_modf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_MODF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_modff' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_MODFF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_modfl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_MODFL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_powf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_POWF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_powl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_POWL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_qfpclass' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_QFPCLASS \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_sincos' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_SINCOS \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_sincosf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_SINCOSF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_sincosl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_SINCOSL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_sinf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_SINF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_sinhf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_SINHF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_sinhl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_SINHL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_sinl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_SINL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_sqrtf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_SQRTF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_sqrtl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_SQRTL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_tanf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_TANF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_tanhf' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_TANHF \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_tanhl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_TANHL \*/

#pragma empty\_line

/\* Define to 1 if you have the `\_tanl' function. \*/

/\* #undef \_GLIBCXX\_HAVE\_\_TANL \*/

#pragma empty\_line

/\* Define as const if the declaration of iconv() needs const. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to the sub-directory in which libtool stores uninstalled libraries.

\*/

#pragma empty\_line

#pragma empty\_line

/\* Name of package \*/

/\* #undef \_GLIBCXX\_PACKAGE \*/

#pragma empty\_line

/\* Define to the address where bug reports for this package should be sent. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to the full name of this package. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to the full name and version of this package. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to the one symbol short name of this package. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to the home page for this package. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to the version of this package. \*/

#pragma empty\_line

#pragma empty\_line

/\* The size of `char', as computed by sizeof. \*/

/\* #undef SIZEOF\_CHAR \*/

#pragma empty\_line

/\* The size of `int', as computed by sizeof. \*/

/\* #undef SIZEOF\_INT \*/

#pragma empty\_line

/\* The size of `long', as computed by sizeof. \*/

/\* #undef SIZEOF\_LONG \*/

#pragma empty\_line

/\* The size of `short', as computed by sizeof. \*/

/\* #undef SIZEOF\_SHORT \*/

#pragma empty\_line

/\* The size of `void \*', as computed by sizeof. \*/

/\* #undef SIZEOF\_VOID\_P \*/

#pragma empty\_line

/\* Define to 1 if you have the ANSI C header files. \*/

#pragma empty\_line

#pragma empty\_line

/\* Version number of package \*/

/\* #undef \_GLIBCXX\_VERSION \*/

#pragma empty\_line

/\* Define if builtin atomic operations for bool are supported on this host. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if builtin atomic operations for short are supported on this host.

\*/

#pragma empty\_line

#pragma empty\_line

/\* Define if builtin atomic operations for int are supported on this host. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if builtin atomic operations for long long are supported on this

host. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to use concept checking code from the boost libraries. \*/

/\* #undef \_GLIBCXX\_CONCEPT\_CHECKS \*/

#pragma empty\_line

/\* Define if a fully dynamic basic\_string is wanted. \*/

/\* #undef \_GLIBCXX\_FULLY\_DYNAMIC\_STRING \*/

#pragma empty\_line

/\* Define if gthreads library is available. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to 1 if a full hosted library is built, or 0 if freestanding. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if compatibility should be provided for -mlong-double-64. \*/

#pragma empty\_line

/\* Define if ptrdiff\_t is int. \*/

/\* #undef \_GLIBCXX\_PTRDIFF\_T\_IS\_INT \*/

#pragma empty\_line

/\* Define if using setrlimit to set resource limits during "make check" \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if size\_t is unsigned int. \*/

/\* #undef \_GLIBCXX\_SIZE\_T\_IS\_UINT \*/

#pragma empty\_line

/\* Define if the compiler is configured for setjmp/longjmp exceptions. \*/

/\* #undef \_GLIBCXX\_SJLJ\_EXCEPTIONS \*/

#pragma empty\_line

/\* Define to the value of the EOF integer constant. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to the value of the SEEK\_CUR integer constant. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to the value of the SEEK\_END integer constant. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to use symbol versioning in the shared library. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to use darwin versioning in the shared library. \*/

/\* #undef \_GLIBCXX\_SYMVER\_DARWIN \*/

#pragma empty\_line

/\* Define to use GNU versioning in the shared library. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define to use GNU namespace versioning in the shared library. \*/

/\* #undef \_GLIBCXX\_SYMVER\_GNU\_NAMESPACE \*/

#pragma empty\_line

/\* Define to use Sun versioning in the shared library. \*/

/\* #undef \_GLIBCXX\_SYMVER\_SUN \*/

#pragma empty\_line

/\* Define if C99 functions or macros from <wchar.h>, <math.h>, <complex.h>,

<stdio.h>, and <stdlib.h> can be used or exposed. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if C99 functions in <complex.h> should be used in <complex>. Using

compiler builtins for these functions requires corresponding C99 library

functions to be present. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if C99 functions in <complex.h> should be used in <tr1/complex>.

Using compiler builtins for these functions requires corresponding C99

library functions to be present. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if C99 functions in <ctype.h> should be imported in <tr1/cctype> in

namespace std::tr1. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if C99 functions in <fenv.h> should be imported in <tr1/cfenv> in

namespace std::tr1. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if C99 functions in <inttypes.h> should be imported in

<tr1/cinttypes> in namespace std::tr1. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if wchar\_t C99 functions in <inttypes.h> should be imported in

<tr1/cinttypes> in namespace std::tr1. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if C99 functions or macros in <math.h> should be imported in <cmath>

in namespace std. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if C99 functions or macros in <math.h> should be imported in

<tr1/cmath> in namespace std::tr1. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if C99 types in <stdint.h> should be imported in <tr1/cstdint> in

namespace std::tr1. \*/

#pragma empty\_line

#pragma empty\_line

/\* Defined if clock\_gettime has monotonic clock support. \*/

/\* #undef \_GLIBCXX\_USE\_CLOCK\_MONOTONIC \*/

#pragma empty\_line

/\* Defined if clock\_gettime has realtime clock support. \*/

/\* #undef \_GLIBCXX\_USE\_CLOCK\_REALTIME \*/

#pragma empty\_line

/\* Define if ISO/IEC TR 24733 decimal floating point types are supported on

this host. \*/

#pragma empty\_line

#pragma empty\_line

/\* Defined if gettimeofday is available. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if LFS support is available. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if code specialized for long long should be used. \*/

#pragma empty\_line

#pragma empty\_line

/\* Defined if nanosleep is available. \*/

/\* #undef \_GLIBCXX\_USE\_NANOSLEEP \*/

#pragma empty\_line

/\* Define if NLS translations are to be used. \*/

#pragma empty\_line

#pragma empty\_line

/\* Define if /dev/random and /dev/urandom are available for the random\_device

of TR1 (Chapter 5.1). \*/

#pragma empty\_line

#pragma empty\_line

/\* Defined if sched\_yield is available. \*/

/\* #undef \_GLIBCXX\_USE\_SCHED\_YIELD \*/

#pragma empty\_line

/\* Define if code specialized for wchar\_t should be used. \*/

#pragma line 43 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/cmath" 2 3

#pragma line 1 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/bits/cpp\_type\_traits.h" 1 3

// The -\*- C++ -\*- type traits classes for internal use in libstdc++

#pragma empty\_line

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// Free Software Foundation, Inc.

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// any later version.

#pragma empty\_line

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// but WITHOUT ANY WARRANTY; without even the implied warranty of

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#pragma empty\_line

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// 3.1, as published by the Free Software Foundation.

#pragma empty\_line

// You should have received a copy of the GNU General Public License and

// a copy of the GCC Runtime Library Exception along with this program;

// see the files COPYING3 and COPYING.RUNTIME respectively. If not, see

// <http://www.gnu.org/licenses/>.

#pragma empty\_line

/\*\* @file bits/cpp\_type\_traits.h

\* This is an internal header file, included by other library headers.

\* Do not attempt to use it directly. @headername{ext/type\_traits}

\*/

#pragma empty\_line

// Written by Gabriel Dos Reis <dosreis@cmla.ens-cachan.fr>

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma line 36 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/bits/cpp\_type\_traits.h" 3

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

//

// This file provides some compile-time information about various types.

// These representations were designed, on purpose, to be constant-expressions

// and not types as found in <bits/type\_traits.h>. In particular, they

// can be used in control structures and the optimizer hopefully will do

// the obvious thing.

//

// Why integral expressions, and not functions nor types?

// Firstly, these compile-time entities are used as template-arguments

// so function return values won't work: We need compile-time entities.

// We're left with types and constant integral expressions.

// Secondly, from the point of view of ease of use, type-based compile-time

// information is -not- \*that\* convenient. On has to write lots of

// overloaded functions and to hope that the compiler will select the right

// one. As a net effect, the overall structure isn't very clear at first

// glance.

// Thirdly, partial ordering and overload resolution (of function templates)

// is highly costly in terms of compiler-resource. It is a Good Thing to

// keep these resource consumption as least as possible.

//

// See valarray\_array.h for a case use.

//

// -- Gaby (dosreis@cmla.ens-cachan.fr) 2000-03-06.

//

// Update 2005: types are also provided and <bits/type\_traits.h> has been

// removed.

//

#pragma empty\_line

// Forward declaration hack, should really include this from somewhere.

namespace \_\_gnu\_cxx \_\_attribute\_\_ ((\_\_visibility\_\_ ("default")))

{

#pragma empty\_line

#pragma empty\_line

template<typename \_Iterator, typename \_Container>

class \_\_normal\_iterator;

#pragma empty\_line

#pragma empty\_line

} // namespace

#pragma empty\_line

namespace std \_\_attribute\_\_ ((\_\_visibility\_\_ ("default")))

{

#pragma empty\_line

#pragma empty\_line

struct \_\_true\_type { };

struct \_\_false\_type { };

#pragma empty\_line

template<bool>

struct \_\_truth\_type

{ typedef \_\_false\_type \_\_type; };

#pragma empty\_line

template<>

struct \_\_truth\_type<true>

{ typedef \_\_true\_type \_\_type; };

#pragma empty\_line

// N.B. The conversions to bool are needed due to the issue

// explained in c++/19404.

template<class \_Sp, class \_Tp>

struct \_\_traitor

{

enum { \_\_value = bool(\_Sp::\_\_value) || bool(\_Tp::\_\_value) };

typedef typename \_\_truth\_type<\_\_value>::\_\_type \_\_type;

};

#pragma empty\_line

// Compare for equality of types.

template<typename, typename>

struct \_\_are\_same

{

enum { \_\_value = 0 };

typedef \_\_false\_type \_\_type;

};

#pragma empty\_line

template<typename \_Tp>

struct \_\_are\_same<\_Tp, \_Tp>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

// Holds if the template-argument is a void type.

template<typename \_Tp>

struct \_\_is\_void

{

enum { \_\_value = 0 };

typedef \_\_false\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_void<void>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

//

// Integer types

//

template<typename \_Tp>

struct \_\_is\_integer

{

enum { \_\_value = 0 };

typedef \_\_false\_type \_\_type;

};

#pragma empty\_line

// Thirteen specializations (yes there are eleven standard integer

// types; <em>long long</em> and <em>unsigned long long</em> are

// supported as extensions)

template<>

struct \_\_is\_integer<bool>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_integer<char>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_integer<signed char>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_integer<unsigned char>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

#pragma empty\_line

template<>

struct \_\_is\_integer<wchar\_t>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma line 198 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/bits/cpp\_type\_traits.h" 3

template<>

struct \_\_is\_integer<short>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_integer<unsigned short>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_integer<int>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_integer<unsigned int>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_integer<long>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_integer<unsigned long>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_integer<long long>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_integer<unsigned long long>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

//

// Floating point types

//

template<typename \_Tp>

struct \_\_is\_floating

{

enum { \_\_value = 0 };

typedef \_\_false\_type \_\_type;

};

#pragma empty\_line

// three specializations (float, double and 'long double')

template<>

struct \_\_is\_floating<float>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_floating<double>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_floating<long double>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

//

// Pointer types

//

template<typename \_Tp>

struct \_\_is\_pointer

{

enum { \_\_value = 0 };

typedef \_\_false\_type \_\_type;

};

#pragma empty\_line

template<typename \_Tp>

struct \_\_is\_pointer<\_Tp\*>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

//

// Normal iterator type

//

template<typename \_Tp>

struct \_\_is\_normal\_iterator

{

enum { \_\_value = 0 };

typedef \_\_false\_type \_\_type;

};

#pragma empty\_line

template<typename \_Iterator, typename \_Container>

struct \_\_is\_normal\_iterator< \_\_gnu\_cxx::\_\_normal\_iterator<\_Iterator,

\_Container> >

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

//

// An arithmetic type is an integer type or a floating point type

//

template<typename \_Tp>

struct \_\_is\_arithmetic

: public \_\_traitor<\_\_is\_integer<\_Tp>, \_\_is\_floating<\_Tp> >

{ };

#pragma empty\_line

//

// A fundamental type is `void' or and arithmetic type

//

template<typename \_Tp>

struct \_\_is\_fundamental

: public \_\_traitor<\_\_is\_void<\_Tp>, \_\_is\_arithmetic<\_Tp> >

{ };

#pragma empty\_line

//

// A scalar type is an arithmetic type or a pointer type

//

template<typename \_Tp>

struct \_\_is\_scalar

: public \_\_traitor<\_\_is\_arithmetic<\_Tp>, \_\_is\_pointer<\_Tp> >

{ };

#pragma empty\_line

//

// For use in std::copy and std::find overloads for streambuf iterators.

//

template<typename \_Tp>

struct \_\_is\_char

{

enum { \_\_value = 0 };

typedef \_\_false\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_char<char>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

#pragma empty\_line

template<>

struct \_\_is\_char<wchar\_t>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

#pragma empty\_line

template<typename \_Tp>

struct \_\_is\_byte

{

enum { \_\_value = 0 };

typedef \_\_false\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_byte<char>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_byte<signed char>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_is\_byte<unsigned char>

{

enum { \_\_value = 1 };

typedef \_\_true\_type \_\_type;

};

#pragma empty\_line

//

// Move iterator type

//

template<typename \_Tp>

struct \_\_is\_move\_iterator

{

enum { \_\_value = 0 };

typedef \_\_false\_type \_\_type;

};

#pragma line 422 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/bits/cpp\_type\_traits.h" 3

} // namespace

#pragma line 44 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/cmath" 2 3

#pragma line 1 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/ext/type\_traits.h" 1 3

// -\*- C++ -\*-

#pragma empty\_line

// Copyright (C) 2005, 2006, 2007, 2009, 2010, 2011

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// software; you can redistribute it and/or modify it under the terms

// of the GNU General Public License as published by the Free Software

// Foundation; either version 3, or (at your option) any later

// version.

#pragma empty\_line

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// a copy of the GCC Runtime Library Exception along with this program;

// see the files COPYING3 and COPYING.RUNTIME respectively. If not, see

// <http://www.gnu.org/licenses/>.

#pragma empty\_line

/\*\* @file ext/type\_traits.h

\* This file is a GNU extension to the Standard C++ Library.

\*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma line 33 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/ext/type\_traits.h" 3

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

namespace \_\_gnu\_cxx \_\_attribute\_\_ ((\_\_visibility\_\_ ("default")))

{

#pragma empty\_line

#pragma empty\_line

// Define a nested type if some predicate holds.

template<bool, typename>

struct \_\_enable\_if

{ };

#pragma empty\_line

template<typename \_Tp>

struct \_\_enable\_if<true, \_Tp>

{ typedef \_Tp \_\_type; };

#pragma empty\_line

#pragma empty\_line

// Conditional expression for types. If true, first, if false, second.

template<bool \_Cond, typename \_Iftrue, typename \_Iffalse>

struct \_\_conditional\_type

{ typedef \_Iftrue \_\_type; };

#pragma empty\_line

template<typename \_Iftrue, typename \_Iffalse>

struct \_\_conditional\_type<false, \_Iftrue, \_Iffalse>

{ typedef \_Iffalse \_\_type; };

#pragma empty\_line

#pragma empty\_line

// Given an integral builtin type, return the corresponding unsigned type.

template<typename \_Tp>

struct \_\_add\_unsigned

{

private:

typedef \_\_enable\_if<std::\_\_is\_integer<\_Tp>::\_\_value, \_Tp> \_\_if\_type;

#pragma empty\_line

public:

typedef typename \_\_if\_type::\_\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_add\_unsigned<char>

{ typedef unsigned char \_\_type; };

#pragma empty\_line

template<>

struct \_\_add\_unsigned<signed char>

{ typedef unsigned char \_\_type; };

#pragma empty\_line

template<>

struct \_\_add\_unsigned<short>

{ typedef unsigned short \_\_type; };

#pragma empty\_line

template<>

struct \_\_add\_unsigned<int>

{ typedef unsigned int \_\_type; };

#pragma empty\_line

template<>

struct \_\_add\_unsigned<long>

{ typedef unsigned long \_\_type; };

#pragma empty\_line

template<>

struct \_\_add\_unsigned<long long>

{ typedef unsigned long long \_\_type; };

#pragma empty\_line

// Declare but don't define.

template<>

struct \_\_add\_unsigned<bool>;

#pragma empty\_line

template<>

struct \_\_add\_unsigned<wchar\_t>;

#pragma empty\_line

#pragma empty\_line

// Given an integral builtin type, return the corresponding signed type.

template<typename \_Tp>

struct \_\_remove\_unsigned

{

private:

typedef \_\_enable\_if<std::\_\_is\_integer<\_Tp>::\_\_value, \_Tp> \_\_if\_type;

#pragma empty\_line

public:

typedef typename \_\_if\_type::\_\_type \_\_type;

};

#pragma empty\_line

template<>

struct \_\_remove\_unsigned<char>

{ typedef signed char \_\_type; };

#pragma empty\_line

template<>

struct \_\_remove\_unsigned<unsigned char>

{ typedef signed char \_\_type; };

#pragma empty\_line

template<>

struct \_\_remove\_unsigned<unsigned short>

{ typedef short \_\_type; };

#pragma empty\_line

template<>

struct \_\_remove\_unsigned<unsigned int>

{ typedef int \_\_type; };

#pragma empty\_line

template<>

struct \_\_remove\_unsigned<unsigned long>

{ typedef long \_\_type; };

#pragma empty\_line

template<>

struct \_\_remove\_unsigned<unsigned long long>

{ typedef long long \_\_type; };

#pragma empty\_line

// Declare but don't define.

template<>

struct \_\_remove\_unsigned<bool>;

#pragma empty\_line

template<>

struct \_\_remove\_unsigned<wchar\_t>;

#pragma empty\_line

#pragma empty\_line

// For use in string and vstring.

template<typename \_Type>

inline bool

\_\_is\_null\_pointer(\_Type\* \_\_ptr)

{ return \_\_ptr == 0; }

#pragma empty\_line

template<typename \_Type>

inline bool

\_\_is\_null\_pointer(\_Type)

{ return false; }

#pragma empty\_line

#pragma empty\_line

// For complex and cmath

template<typename \_Tp, bool = std::\_\_is\_integer<\_Tp>::\_\_value>

struct \_\_promote

{ typedef double \_\_type; };

#pragma empty\_line

// No nested \_\_type member for non-integer non-floating point types,

// allows this type to be used for SFINAE to constrain overloads in

// <cmath> and <complex> to only the intended types.

template<typename \_Tp>

struct \_\_promote<\_Tp, false>

{ };

#pragma empty\_line

template<>

struct \_\_promote<long double>

{ typedef long double \_\_type; };

#pragma empty\_line

template<>

struct \_\_promote<double>

{ typedef double \_\_type; };

#pragma empty\_line

template<>

struct \_\_promote<float>

{ typedef float \_\_type; };

#pragma empty\_line

template<typename \_Tp, typename \_Up,

typename \_Tp2 = typename \_\_promote<\_Tp>::\_\_type,

typename \_Up2 = typename \_\_promote<\_Up>::\_\_type>

struct \_\_promote\_2

{

typedef \_\_typeof\_\_(\_Tp2() + \_Up2()) \_\_type;

};

#pragma empty\_line

template<typename \_Tp, typename \_Up, typename \_Vp,

typename \_Tp2 = typename \_\_promote<\_Tp>::\_\_type,

typename \_Up2 = typename \_\_promote<\_Up>::\_\_type,

typename \_Vp2 = typename \_\_promote<\_Vp>::\_\_type>

struct \_\_promote\_3

{

typedef \_\_typeof\_\_(\_Tp2() + \_Up2() + \_Vp2()) \_\_type;

};

#pragma empty\_line

template<typename \_Tp, typename \_Up, typename \_Vp, typename \_Wp,

typename \_Tp2 = typename \_\_promote<\_Tp>::\_\_type,

typename \_Up2 = typename \_\_promote<\_Up>::\_\_type,

typename \_Vp2 = typename \_\_promote<\_Vp>::\_\_type,

typename \_Wp2 = typename \_\_promote<\_Wp>::\_\_type>

struct \_\_promote\_4

{

typedef \_\_typeof\_\_(\_Tp2() + \_Up2() + \_Vp2() + \_Wp2()) \_\_type;

};

#pragma empty\_line

#pragma empty\_line

} // namespace

#pragma line 45 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/cmath" 2 3

#pragma line 1 "/usr/include/math.h" 1 3 4

/\* Declarations for math functions.

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02111-1307 USA. \*/

#pragma empty\_line

/\*

\* ISO C99 Standard: 7.12 Mathematics <math.h>

\*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

extern "C" {

#pragma empty\_line

/\* Get machine-dependent HUGE\_VAL value (returned on overflow).

On all IEEE754 machines, this is +Infinity. \*/

#pragma empty\_line

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/huge\_val.h" 1 3 4

/\* `HUGE\_VAL' constant for IEEE 754 machines (where it is infinity).

Used by <stdlib.h> and <math.h> functions for overflow.

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Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA

02111-1307 USA. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* IEEE positive infinity (-HUGE\_VAL is negative infinity). \*/

#pragma line 35 "/usr/include/math.h" 2 3 4

#pragma empty\_line

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/huge\_valf.h" 1 3 4

/\* `HUGE\_VALF' constant for IEEE 754 machines (where it is infinity).

Used by <stdlib.h> and <math.h> functions for overflow.

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02111-1307 USA. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* IEEE positive infinity (-HUGE\_VAL is negative infinity). \*/

#pragma line 37 "/usr/include/math.h" 2 3 4

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/huge\_vall.h" 1 3 4

/\* Default `HUGE\_VALL' constant.

Used by <stdlib.h> and <math.h> functions for overflow.

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02111-1307 USA. \*/

#pragma line 38 "/usr/include/math.h" 2 3 4

#pragma empty\_line

/\* Get machine-dependent INFINITY value. \*/

#pragma empty\_line

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/inf.h" 1 3 4

/\* `INFINITY' constant for IEEE 754 machines.

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02111-1307 USA. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* IEEE positive infinity. \*/

#pragma line 41 "/usr/include/math.h" 2 3 4

#pragma empty\_line

/\* Get machine-dependent NAN value (returned for some domain errors). \*/

#pragma empty\_line

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/nan.h" 1 3 4

/\* `NAN' constant for IEEE 754 machines.

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02111-1307 USA. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* IEEE Not A Number. \*/

#pragma line 44 "/usr/include/math.h" 2 3 4

#pragma empty\_line

#pragma empty\_line

/\* Get general and ISO C99 specific information. \*/

#pragma empty\_line

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/mathdef.h" 1 3 4

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02111-1307 USA. \*/

#pragma line 26 "/usr/include/x86\_64-linux-gnu/bits/mathdef.h" 3 4

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/wordsize.h" 1 3 4

/\* Determine the wordsize from the preprocessor defines. \*/

#pragma line 27 "/usr/include/x86\_64-linux-gnu/bits/mathdef.h" 2 3 4

#pragma empty\_line

#pragma empty\_line

/\* The x86-64 architecture computes values with the precission of the

used type. Similarly for -m32 -mfpmath=sse. \*/

typedef float float\_t; /\* `float' expressions are evaluated as `float'. \*/

typedef double double\_t; /\* `double' expressions are evaluated

as `double'. \*/

#pragma line 44 "/usr/include/x86\_64-linux-gnu/bits/mathdef.h" 3 4

/\* The values returned by `ilogb' for 0 and NaN respectively. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* The GCC 4.6 compiler will define \_\_FP\_FAST\_FMA{,F,L} if the fma{,f,l}

builtins are supported. \*/

#pragma line 48 "/usr/include/math.h" 2 3 4

#pragma empty\_line

/\* The file <bits/mathcalls.h> contains the prototypes for all the

actual math functions. These macros are used for those prototypes,

so we can easily declare each function as both `name' and `\_\_name',

and can declare the float versions `namef' and `\_\_namef'. \*/

#pragma line 71 "/usr/include/math.h" 3 4

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/mathcalls.h" 1 3 4

/\* Prototype declarations for math functions; helper file for <math.h>.

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02111-1307 USA. \*/

#pragma empty\_line

/\* NOTE: Because of the special way this file is used by <math.h>, this

file must NOT be protected from multiple inclusion as header files

usually are.

#pragma empty\_line

This file provides prototype declarations for the math functions.

Most functions are declared using the macro:

#pragma empty\_line

\_\_MATHCALL (NAME,[\_r], (ARGS...));

#pragma empty\_line

This means there is a function `NAME' returning `double' and a function

`NAMEf' returning `float'. Each place `\_Mdouble\_' appears in the

prototype, that is actually `double' in the prototype for `NAME' and

`float' in the prototype for `NAMEf'. Reentrant variant functions are

called `NAME\_r' and `NAMEf\_r'.

#pragma empty\_line

Functions returning other types like `int' are declared using the macro:

#pragma empty\_line

\_\_MATHDECL (TYPE, NAME,[\_r], (ARGS...));

#pragma empty\_line

This is just like \_\_MATHCALL but for a function returning `TYPE'

instead of `\_Mdouble\_'. In all of these cases, there is still

both a `NAME' and a `NAMEf' that takes `float' arguments.

#pragma empty\_line

Note that there must be no whitespace before the argument passed for

NAME, to make token pasting work with -traditional. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Trigonometric functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Arc cosine of X. \*/

extern double acos (double \_\_x) throw (); extern double \_\_acos (double \_\_x) throw ();

/\* Arc sine of X. \*/

extern double asin (double \_\_x) throw (); extern double \_\_asin (double \_\_x) throw ();

/\* Arc tangent of X. \*/

extern double atan (double \_\_x) throw (); extern double \_\_atan (double \_\_x) throw ();

/\* Arc tangent of Y/X. \*/

extern double atan2 (double \_\_y, double \_\_x) throw (); extern double \_\_atan2 (double \_\_y, double \_\_x) throw ();

#pragma empty\_line

/\* Cosine of X. \*/

extern double cos (double \_\_x) throw (); extern double \_\_cos (double \_\_x) throw ();

/\* Sine of X. \*/

extern double sin (double \_\_x) throw (); extern double \_\_sin (double \_\_x) throw ();

/\* Tangent of X. \*/

extern double tan (double \_\_x) throw (); extern double \_\_tan (double \_\_x) throw ();

#pragma empty\_line

/\* Hyperbolic functions. \*/

#pragma empty\_line

/\* Hyperbolic cosine of X. \*/

extern double cosh (double \_\_x) throw (); extern double \_\_cosh (double \_\_x) throw ();

/\* Hyperbolic sine of X. \*/

extern double sinh (double \_\_x) throw (); extern double \_\_sinh (double \_\_x) throw ();

/\* Hyperbolic tangent of X. \*/

extern double tanh (double \_\_x) throw (); extern double \_\_tanh (double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Cosine and sine of X. \*/

extern void sincos (double \_\_x, double \*\_\_sinx, double \*\_\_cosx) throw (); extern void \_\_sincos (double \_\_x, double \*\_\_sinx, double \*\_\_cosx) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Hyperbolic arc cosine of X. \*/

extern double acosh (double \_\_x) throw (); extern double \_\_acosh (double \_\_x) throw ();

/\* Hyperbolic arc sine of X. \*/

extern double asinh (double \_\_x) throw (); extern double \_\_asinh (double \_\_x) throw ();

/\* Hyperbolic arc tangent of X. \*/

extern double atanh (double \_\_x) throw (); extern double \_\_atanh (double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Exponential and logarithmic functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Exponential function of X. \*/

extern double exp (double \_\_x) throw (); extern double \_\_exp (double \_\_x) throw ();

#pragma empty\_line

/\* Break VALUE into a normalized fraction and an integral power of 2. \*/

extern double frexp (double \_\_x, int \*\_\_exponent) throw (); extern double \_\_frexp (double \_\_x, int \*\_\_exponent) throw ();

#pragma empty\_line

/\* X times (two to the EXP power). \*/

extern double ldexp (double \_\_x, int \_\_exponent) throw (); extern double \_\_ldexp (double \_\_x, int \_\_exponent) throw ();

#pragma empty\_line

/\* Natural logarithm of X. \*/

extern double log (double \_\_x) throw (); extern double \_\_log (double \_\_x) throw ();

#pragma empty\_line

/\* Base-ten logarithm of X. \*/

extern double log10 (double \_\_x) throw (); extern double \_\_log10 (double \_\_x) throw ();

#pragma empty\_line

/\* Break VALUE into integral and fractional parts. \*/

extern double modf (double \_\_x, double \*\_\_iptr) throw (); extern double \_\_modf (double \_\_x, double \*\_\_iptr) throw ()

\_\_attribute\_\_ ((\_\_nonnull\_\_ (2)));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* A function missing in all standards: compute exponent to base ten. \*/

extern double exp10 (double \_\_x) throw (); extern double \_\_exp10 (double \_\_x) throw ();

/\* Another name occasionally used. \*/

extern double pow10 (double \_\_x) throw (); extern double \_\_pow10 (double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return exp(X) - 1. \*/

extern double expm1 (double \_\_x) throw (); extern double \_\_expm1 (double \_\_x) throw ();

#pragma empty\_line

/\* Return log(1 + X). \*/

extern double log1p (double \_\_x) throw (); extern double \_\_log1p (double \_\_x) throw ();

#pragma empty\_line

/\* Return the base 2 signed integral exponent of X. \*/

extern double logb (double \_\_x) throw (); extern double \_\_logb (double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Compute base-2 exponential of X. \*/

extern double exp2 (double \_\_x) throw (); extern double \_\_exp2 (double \_\_x) throw ();

#pragma empty\_line

/\* Compute base-2 logarithm of X. \*/

extern double log2 (double \_\_x) throw (); extern double \_\_log2 (double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Power functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Return X to the Y power. \*/

extern double pow (double \_\_x, double \_\_y) throw (); extern double \_\_pow (double \_\_x, double \_\_y) throw ();

#pragma empty\_line

/\* Return the square root of X. \*/

extern double sqrt (double \_\_x) throw (); extern double \_\_sqrt (double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return `sqrt(X\*X + Y\*Y)'. \*/

extern double hypot (double \_\_x, double \_\_y) throw (); extern double \_\_hypot (double \_\_x, double \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return the cube root of X. \*/

extern double cbrt (double \_\_x) throw (); extern double \_\_cbrt (double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Nearest integer, absolute value, and remainder functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Smallest integral value not less than X. \*/

extern double ceil (double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern double \_\_ceil (double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Absolute value of X. \*/

extern double fabs (double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern double \_\_fabs (double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Largest integer not greater than X. \*/

extern double floor (double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern double \_\_floor (double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Floating-point modulo remainder of X/Y. \*/

extern double fmod (double \_\_x, double \_\_y) throw (); extern double \_\_fmod (double \_\_x, double \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return 0 if VALUE is finite or NaN, +1 if it

is +Infinity, -1 if it is -Infinity. \*/

extern int \_\_isinf (double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Return nonzero if VALUE is finite and not NaN. \*/

extern int \_\_finite (double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return 0 if VALUE is finite or NaN, +1 if it

is +Infinity, -1 if it is -Infinity. \*/

extern int isinf (double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Return nonzero if VALUE is finite and not NaN. \*/

extern int finite (double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Return the remainder of X/Y. \*/

extern double drem (double \_\_x, double \_\_y) throw (); extern double \_\_drem (double \_\_x, double \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return the fractional part of X after dividing out `ilogb (X)'. \*/

extern double significand (double \_\_x) throw (); extern double \_\_significand (double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return X with its signed changed to Y's. \*/

extern double copysign (double \_\_x, double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern double \_\_copysign (double \_\_x, double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return representation of NaN for double type. \*/

extern double nan (\_\_const char \*\_\_tagb) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern double \_\_nan (\_\_const char \*\_\_tagb) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero if VALUE is not a number. \*/

extern int \_\_isnan (double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero if VALUE is not a number. \*/

extern int isnan (double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Bessel functions. \*/

extern double j0 (double) throw (); extern double \_\_j0 (double) throw ();

extern double j1 (double) throw (); extern double \_\_j1 (double) throw ();

extern double jn (int, double) throw (); extern double \_\_jn (int, double) throw ();

extern double y0 (double) throw (); extern double \_\_y0 (double) throw ();

extern double y1 (double) throw (); extern double \_\_y1 (double) throw ();

extern double yn (int, double) throw (); extern double \_\_yn (int, double) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Error and gamma functions. \*/

extern double erf (double) throw (); extern double \_\_erf (double) throw ();

extern double erfc (double) throw (); extern double \_\_erfc (double) throw ();

extern double lgamma (double) throw (); extern double \_\_lgamma (double) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* True gamma function. \*/

extern double tgamma (double) throw (); extern double \_\_tgamma (double) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Obsolete alias for `lgamma'. \*/

extern double gamma (double) throw (); extern double \_\_gamma (double) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Reentrant version of lgamma. This function uses the global variable

`signgam'. The reentrant version instead takes a pointer and stores

the value through it. \*/

extern double lgamma\_r (double, int \*\_\_signgamp) throw (); extern double \_\_lgamma\_r (double, int \*\_\_signgamp) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return the integer nearest X in the direction of the

prevailing rounding mode. \*/

extern double rint (double \_\_x) throw (); extern double \_\_rint (double \_\_x) throw ();

#pragma empty\_line

/\* Return X + epsilon if X < Y, X - epsilon if X > Y. \*/

extern double nextafter (double \_\_x, double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern double \_\_nextafter (double \_\_x, double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

extern double nexttoward (double \_\_x, long double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern double \_\_nexttoward (double \_\_x, long double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

/\* Return the remainder of integer divison X / Y with infinite precision. \*/

extern double remainder (double \_\_x, double \_\_y) throw (); extern double \_\_remainder (double \_\_x, double \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return X times (2 to the Nth power). \*/

extern double scalbn (double \_\_x, int \_\_n) throw (); extern double \_\_scalbn (double \_\_x, int \_\_n) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return the binary exponent of X, which must be nonzero. \*/

extern int ilogb (double \_\_x) throw (); extern int \_\_ilogb (double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return X times (2 to the Nth power). \*/

extern double scalbln (double \_\_x, long int \_\_n) throw (); extern double \_\_scalbln (double \_\_x, long int \_\_n) throw ();

#pragma empty\_line

/\* Round X to integral value in floating-point format using current

rounding direction, but do not raise inexact exception. \*/

extern double nearbyint (double \_\_x) throw (); extern double \_\_nearbyint (double \_\_x) throw ();

#pragma empty\_line

/\* Round X to nearest integral value, rounding halfway cases away from

zero. \*/

extern double round (double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern double \_\_round (double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Round X to the integral value in floating-point format nearest but

not larger in magnitude. \*/

extern double trunc (double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern double \_\_trunc (double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Compute remainder of X and Y and put in \*QUO a value with sign of x/y

and magnitude congruent `mod 2^n' to the magnitude of the integral

quotient x/y, with n >= 3. \*/

extern double remquo (double \_\_x, double \_\_y, int \*\_\_quo) throw (); extern double \_\_remquo (double \_\_x, double \_\_y, int \*\_\_quo) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Conversion functions. \*/

#pragma empty\_line

/\* Round X to nearest integral value according to current rounding

direction. \*/

extern long int lrint (double \_\_x) throw (); extern long int \_\_lrint (double \_\_x) throw ();

extern long long int llrint (double \_\_x) throw (); extern long long int \_\_llrint (double \_\_x) throw ();

#pragma empty\_line

/\* Round X to nearest integral value, rounding halfway cases away from

zero. \*/

extern long int lround (double \_\_x) throw (); extern long int \_\_lround (double \_\_x) throw ();

extern long long int llround (double \_\_x) throw (); extern long long int \_\_llround (double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return positive difference between X and Y. \*/

extern double fdim (double \_\_x, double \_\_y) throw (); extern double \_\_fdim (double \_\_x, double \_\_y) throw ();

#pragma empty\_line

/\* Return maximum numeric value from X and Y. \*/

extern double fmax (double \_\_x, double \_\_y) throw (); extern double \_\_fmax (double \_\_x, double \_\_y) throw ();

#pragma empty\_line

/\* Return minimum numeric value from X and Y. \*/

extern double fmin (double \_\_x, double \_\_y) throw (); extern double \_\_fmin (double \_\_x, double \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Classify given number. \*/

extern int \_\_fpclassify (double \_\_value) throw ()

\_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Test for negative number. \*/

extern int \_\_signbit (double \_\_value) throw ()

\_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

/\* Multiply-add function computed as a ternary operation. \*/

extern double fma (double \_\_x, double \_\_y, double \_\_z) throw (); extern double \_\_fma (double \_\_x, double \_\_y, double \_\_z) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return X times (2 to the Nth power). \*/

extern double scalb (double \_\_x, double \_\_n) throw (); extern double \_\_scalb (double \_\_x, double \_\_n) throw ();

#pragma line 72 "/usr/include/math.h" 2 3 4

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Include the file of declarations again, this time using `float'

instead of `double' and appending f to each function name. \*/

#pragma line 94 "/usr/include/math.h" 3 4

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/mathcalls.h" 1 3 4

/\* Prototype declarations for math functions; helper file for <math.h>.

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02111-1307 USA. \*/

#pragma empty\_line

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file must NOT be protected from multiple inclusion as header files

usually are.

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This file provides prototype declarations for the math functions.

Most functions are declared using the macro:

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\_\_MATHCALL (NAME,[\_r], (ARGS...));

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This means there is a function `NAME' returning `double' and a function

`NAMEf' returning `float'. Each place `\_Mdouble\_' appears in the

prototype, that is actually `double' in the prototype for `NAME' and

`float' in the prototype for `NAMEf'. Reentrant variant functions are

called `NAME\_r' and `NAMEf\_r'.

#pragma empty\_line

Functions returning other types like `int' are declared using the macro:

#pragma empty\_line

\_\_MATHDECL (TYPE, NAME,[\_r], (ARGS...));

#pragma empty\_line

This is just like \_\_MATHCALL but for a function returning `TYPE'

instead of `\_Mdouble\_'. In all of these cases, there is still

both a `NAME' and a `NAMEf' that takes `float' arguments.

#pragma empty\_line

Note that there must be no whitespace before the argument passed for

NAME, to make token pasting work with -traditional. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Trigonometric functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Arc cosine of X. \*/

extern float acosf (float \_\_x) throw (); extern float \_\_acosf (float \_\_x) throw ();

/\* Arc sine of X. \*/

extern float asinf (float \_\_x) throw (); extern float \_\_asinf (float \_\_x) throw ();

/\* Arc tangent of X. \*/

extern float atanf (float \_\_x) throw (); extern float \_\_atanf (float \_\_x) throw ();

/\* Arc tangent of Y/X. \*/

extern float atan2f (float \_\_y, float \_\_x) throw (); extern float \_\_atan2f (float \_\_y, float \_\_x) throw ();

#pragma empty\_line

/\* Cosine of X. \*/

extern float cosf (float \_\_x) throw (); extern float \_\_cosf (float \_\_x) throw ();

/\* Sine of X. \*/

extern float sinf (float \_\_x) throw (); extern float \_\_sinf (float \_\_x) throw ();

/\* Tangent of X. \*/

extern float tanf (float \_\_x) throw (); extern float \_\_tanf (float \_\_x) throw ();

#pragma empty\_line

/\* Hyperbolic functions. \*/

#pragma empty\_line

/\* Hyperbolic cosine of X. \*/

extern float coshf (float \_\_x) throw (); extern float \_\_coshf (float \_\_x) throw ();

/\* Hyperbolic sine of X. \*/

extern float sinhf (float \_\_x) throw (); extern float \_\_sinhf (float \_\_x) throw ();

/\* Hyperbolic tangent of X. \*/

extern float tanhf (float \_\_x) throw (); extern float \_\_tanhf (float \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Cosine and sine of X. \*/

extern void sincosf (float \_\_x, float \*\_\_sinx, float \*\_\_cosx) throw (); extern void \_\_sincosf (float \_\_x, float \*\_\_sinx, float \*\_\_cosx) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Hyperbolic arc cosine of X. \*/

extern float acoshf (float \_\_x) throw (); extern float \_\_acoshf (float \_\_x) throw ();

/\* Hyperbolic arc sine of X. \*/

extern float asinhf (float \_\_x) throw (); extern float \_\_asinhf (float \_\_x) throw ();

/\* Hyperbolic arc tangent of X. \*/

extern float atanhf (float \_\_x) throw (); extern float \_\_atanhf (float \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Exponential and logarithmic functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Exponential function of X. \*/

extern float expf (float \_\_x) throw (); extern float \_\_expf (float \_\_x) throw ();

#pragma empty\_line

/\* Break VALUE into a normalized fraction and an integral power of 2. \*/

extern float frexpf (float \_\_x, int \*\_\_exponent) throw (); extern float \_\_frexpf (float \_\_x, int \*\_\_exponent) throw ();

#pragma empty\_line

/\* X times (two to the EXP power). \*/

extern float ldexpf (float \_\_x, int \_\_exponent) throw (); extern float \_\_ldexpf (float \_\_x, int \_\_exponent) throw ();

#pragma empty\_line

/\* Natural logarithm of X. \*/

extern float logf (float \_\_x) throw (); extern float \_\_logf (float \_\_x) throw ();

#pragma empty\_line

/\* Base-ten logarithm of X. \*/

extern float log10f (float \_\_x) throw (); extern float \_\_log10f (float \_\_x) throw ();

#pragma empty\_line

/\* Break VALUE into integral and fractional parts. \*/

extern float modff (float \_\_x, float \*\_\_iptr) throw (); extern float \_\_modff (float \_\_x, float \*\_\_iptr) throw ()

\_\_attribute\_\_ ((\_\_nonnull\_\_ (2)));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* A function missing in all standards: compute exponent to base ten. \*/

extern float exp10f (float \_\_x) throw (); extern float \_\_exp10f (float \_\_x) throw ();

/\* Another name occasionally used. \*/

extern float pow10f (float \_\_x) throw (); extern float \_\_pow10f (float \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return exp(X) - 1. \*/

extern float expm1f (float \_\_x) throw (); extern float \_\_expm1f (float \_\_x) throw ();

#pragma empty\_line

/\* Return log(1 + X). \*/

extern float log1pf (float \_\_x) throw (); extern float \_\_log1pf (float \_\_x) throw ();

#pragma empty\_line

/\* Return the base 2 signed integral exponent of X. \*/

extern float logbf (float \_\_x) throw (); extern float \_\_logbf (float \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Compute base-2 exponential of X. \*/

extern float exp2f (float \_\_x) throw (); extern float \_\_exp2f (float \_\_x) throw ();

#pragma empty\_line

/\* Compute base-2 logarithm of X. \*/

extern float log2f (float \_\_x) throw (); extern float \_\_log2f (float \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Power functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Return X to the Y power. \*/

extern float powf (float \_\_x, float \_\_y) throw (); extern float \_\_powf (float \_\_x, float \_\_y) throw ();

#pragma empty\_line

/\* Return the square root of X. \*/

extern float sqrtf (float \_\_x) throw (); extern float \_\_sqrtf (float \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return `sqrt(X\*X + Y\*Y)'. \*/

extern float hypotf (float \_\_x, float \_\_y) throw (); extern float \_\_hypotf (float \_\_x, float \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return the cube root of X. \*/

extern float cbrtf (float \_\_x) throw (); extern float \_\_cbrtf (float \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Nearest integer, absolute value, and remainder functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Smallest integral value not less than X. \*/

extern float ceilf (float \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern float \_\_ceilf (float \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Absolute value of X. \*/

extern float fabsf (float \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern float \_\_fabsf (float \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Largest integer not greater than X. \*/

extern float floorf (float \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern float \_\_floorf (float \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Floating-point modulo remainder of X/Y. \*/

extern float fmodf (float \_\_x, float \_\_y) throw (); extern float \_\_fmodf (float \_\_x, float \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return 0 if VALUE is finite or NaN, +1 if it

is +Infinity, -1 if it is -Infinity. \*/

extern int \_\_isinff (float \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Return nonzero if VALUE is finite and not NaN. \*/

extern int \_\_finitef (float \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return 0 if VALUE is finite or NaN, +1 if it

is +Infinity, -1 if it is -Infinity. \*/

extern int isinff (float \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Return nonzero if VALUE is finite and not NaN. \*/

extern int finitef (float \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Return the remainder of X/Y. \*/

extern float dremf (float \_\_x, float \_\_y) throw (); extern float \_\_dremf (float \_\_x, float \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return the fractional part of X after dividing out `ilogb (X)'. \*/

extern float significandf (float \_\_x) throw (); extern float \_\_significandf (float \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return X with its signed changed to Y's. \*/

extern float copysignf (float \_\_x, float \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern float \_\_copysignf (float \_\_x, float \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return representation of NaN for double type. \*/

extern float nanf (\_\_const char \*\_\_tagb) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern float \_\_nanf (\_\_const char \*\_\_tagb) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero if VALUE is not a number. \*/

extern int \_\_isnanf (float \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero if VALUE is not a number. \*/

extern int isnanf (float \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Bessel functions. \*/

extern float j0f (float) throw (); extern float \_\_j0f (float) throw ();

extern float j1f (float) throw (); extern float \_\_j1f (float) throw ();

extern float jnf (int, float) throw (); extern float \_\_jnf (int, float) throw ();

extern float y0f (float) throw (); extern float \_\_y0f (float) throw ();

extern float y1f (float) throw (); extern float \_\_y1f (float) throw ();

extern float ynf (int, float) throw (); extern float \_\_ynf (int, float) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Error and gamma functions. \*/

extern float erff (float) throw (); extern float \_\_erff (float) throw ();

extern float erfcf (float) throw (); extern float \_\_erfcf (float) throw ();

extern float lgammaf (float) throw (); extern float \_\_lgammaf (float) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* True gamma function. \*/

extern float tgammaf (float) throw (); extern float \_\_tgammaf (float) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Obsolete alias for `lgamma'. \*/

extern float gammaf (float) throw (); extern float \_\_gammaf (float) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Reentrant version of lgamma. This function uses the global variable

`signgam'. The reentrant version instead takes a pointer and stores

the value through it. \*/

extern float lgammaf\_r (float, int \*\_\_signgamp) throw (); extern float \_\_lgammaf\_r (float, int \*\_\_signgamp) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return the integer nearest X in the direction of the

prevailing rounding mode. \*/

extern float rintf (float \_\_x) throw (); extern float \_\_rintf (float \_\_x) throw ();

#pragma empty\_line

/\* Return X + epsilon if X < Y, X - epsilon if X > Y. \*/

extern float nextafterf (float \_\_x, float \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern float \_\_nextafterf (float \_\_x, float \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

extern float nexttowardf (float \_\_x, long double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern float \_\_nexttowardf (float \_\_x, long double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

/\* Return the remainder of integer divison X / Y with infinite precision. \*/

extern float remainderf (float \_\_x, float \_\_y) throw (); extern float \_\_remainderf (float \_\_x, float \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return X times (2 to the Nth power). \*/

extern float scalbnf (float \_\_x, int \_\_n) throw (); extern float \_\_scalbnf (float \_\_x, int \_\_n) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return the binary exponent of X, which must be nonzero. \*/

extern int ilogbf (float \_\_x) throw (); extern int \_\_ilogbf (float \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return X times (2 to the Nth power). \*/

extern float scalblnf (float \_\_x, long int \_\_n) throw (); extern float \_\_scalblnf (float \_\_x, long int \_\_n) throw ();

#pragma empty\_line

/\* Round X to integral value in floating-point format using current

rounding direction, but do not raise inexact exception. \*/

extern float nearbyintf (float \_\_x) throw (); extern float \_\_nearbyintf (float \_\_x) throw ();

#pragma empty\_line

/\* Round X to nearest integral value, rounding halfway cases away from

zero. \*/

extern float roundf (float \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern float \_\_roundf (float \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Round X to the integral value in floating-point format nearest but

not larger in magnitude. \*/

extern float truncf (float \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern float \_\_truncf (float \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Compute remainder of X and Y and put in \*QUO a value with sign of x/y

and magnitude congruent `mod 2^n' to the magnitude of the integral

quotient x/y, with n >= 3. \*/

extern float remquof (float \_\_x, float \_\_y, int \*\_\_quo) throw (); extern float \_\_remquof (float \_\_x, float \_\_y, int \*\_\_quo) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Conversion functions. \*/

#pragma empty\_line

/\* Round X to nearest integral value according to current rounding

direction. \*/

extern long int lrintf (float \_\_x) throw (); extern long int \_\_lrintf (float \_\_x) throw ();

extern long long int llrintf (float \_\_x) throw (); extern long long int \_\_llrintf (float \_\_x) throw ();

#pragma empty\_line

/\* Round X to nearest integral value, rounding halfway cases away from

zero. \*/

extern long int lroundf (float \_\_x) throw (); extern long int \_\_lroundf (float \_\_x) throw ();

extern long long int llroundf (float \_\_x) throw (); extern long long int \_\_llroundf (float \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return positive difference between X and Y. \*/

extern float fdimf (float \_\_x, float \_\_y) throw (); extern float \_\_fdimf (float \_\_x, float \_\_y) throw ();

#pragma empty\_line

/\* Return maximum numeric value from X and Y. \*/

extern float fmaxf (float \_\_x, float \_\_y) throw (); extern float \_\_fmaxf (float \_\_x, float \_\_y) throw ();

#pragma empty\_line

/\* Return minimum numeric value from X and Y. \*/

extern float fminf (float \_\_x, float \_\_y) throw (); extern float \_\_fminf (float \_\_x, float \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Classify given number. \*/

extern int \_\_fpclassifyf (float \_\_value) throw ()

\_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Test for negative number. \*/

extern int \_\_signbitf (float \_\_value) throw ()

\_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

/\* Multiply-add function computed as a ternary operation. \*/

extern float fmaf (float \_\_x, float \_\_y, float \_\_z) throw (); extern float \_\_fmaf (float \_\_x, float \_\_y, float \_\_z) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return X times (2 to the Nth power). \*/

extern float scalbf (float \_\_x, float \_\_n) throw (); extern float \_\_scalbf (float \_\_x, float \_\_n) throw ();

#pragma line 95 "/usr/include/math.h" 2 3 4

#pragma line 131 "/usr/include/math.h" 3 4

/\* Include the file of declarations again, this time using `long double'

instead of `double' and appending l to each function name. \*/

#pragma line 146 "/usr/include/math.h" 3 4

#pragma line 1 "/usr/include/x86\_64-linux-gnu/bits/mathcalls.h" 1 3 4

/\* Prototype declarations for math functions; helper file for <math.h>.

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02111-1307 USA. \*/

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prototype, that is actually `double' in the prototype for `NAME' and

`float' in the prototype for `NAMEf'. Reentrant variant functions are

called `NAME\_r' and `NAMEf\_r'.

#pragma empty\_line

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#pragma empty\_line

\_\_MATHDECL (TYPE, NAME,[\_r], (ARGS...));

#pragma empty\_line

This is just like \_\_MATHCALL but for a function returning `TYPE'

instead of `\_Mdouble\_'. In all of these cases, there is still

both a `NAME' and a `NAMEf' that takes `float' arguments.

#pragma empty\_line

Note that there must be no whitespace before the argument passed for

NAME, to make token pasting work with -traditional. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Trigonometric functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Arc cosine of X. \*/

extern long double acosl (long double \_\_x) throw (); extern long double \_\_acosl (long double \_\_x) throw ();

/\* Arc sine of X. \*/

extern long double asinl (long double \_\_x) throw (); extern long double \_\_asinl (long double \_\_x) throw ();

/\* Arc tangent of X. \*/

extern long double atanl (long double \_\_x) throw (); extern long double \_\_atanl (long double \_\_x) throw ();

/\* Arc tangent of Y/X. \*/

extern long double atan2l (long double \_\_y, long double \_\_x) throw (); extern long double \_\_atan2l (long double \_\_y, long double \_\_x) throw ();

#pragma empty\_line

/\* Cosine of X. \*/

extern long double cosl (long double \_\_x) throw (); extern long double \_\_cosl (long double \_\_x) throw ();

/\* Sine of X. \*/

extern long double sinl (long double \_\_x) throw (); extern long double \_\_sinl (long double \_\_x) throw ();

/\* Tangent of X. \*/

extern long double tanl (long double \_\_x) throw (); extern long double \_\_tanl (long double \_\_x) throw ();

#pragma empty\_line

/\* Hyperbolic functions. \*/

#pragma empty\_line

/\* Hyperbolic cosine of X. \*/

extern long double coshl (long double \_\_x) throw (); extern long double \_\_coshl (long double \_\_x) throw ();

/\* Hyperbolic sine of X. \*/

extern long double sinhl (long double \_\_x) throw (); extern long double \_\_sinhl (long double \_\_x) throw ();

/\* Hyperbolic tangent of X. \*/

extern long double tanhl (long double \_\_x) throw (); extern long double \_\_tanhl (long double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Cosine and sine of X. \*/

extern void sincosl (long double \_\_x, long double \*\_\_sinx, long double \*\_\_cosx) throw (); extern void \_\_sincosl (long double \_\_x, long double \*\_\_sinx, long double \*\_\_cosx) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Hyperbolic arc cosine of X. \*/

extern long double acoshl (long double \_\_x) throw (); extern long double \_\_acoshl (long double \_\_x) throw ();

/\* Hyperbolic arc sine of X. \*/

extern long double asinhl (long double \_\_x) throw (); extern long double \_\_asinhl (long double \_\_x) throw ();

/\* Hyperbolic arc tangent of X. \*/

extern long double atanhl (long double \_\_x) throw (); extern long double \_\_atanhl (long double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Exponential and logarithmic functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Exponential function of X. \*/

extern long double expl (long double \_\_x) throw (); extern long double \_\_expl (long double \_\_x) throw ();

#pragma empty\_line

/\* Break VALUE into a normalized fraction and an integral power of 2. \*/

extern long double frexpl (long double \_\_x, int \*\_\_exponent) throw (); extern long double \_\_frexpl (long double \_\_x, int \*\_\_exponent) throw ();

#pragma empty\_line

/\* X times (two to the EXP power). \*/

extern long double ldexpl (long double \_\_x, int \_\_exponent) throw (); extern long double \_\_ldexpl (long double \_\_x, int \_\_exponent) throw ();

#pragma empty\_line

/\* Natural logarithm of X. \*/

extern long double logl (long double \_\_x) throw (); extern long double \_\_logl (long double \_\_x) throw ();

#pragma empty\_line

/\* Base-ten logarithm of X. \*/

extern long double log10l (long double \_\_x) throw (); extern long double \_\_log10l (long double \_\_x) throw ();

#pragma empty\_line

/\* Break VALUE into integral and fractional parts. \*/

extern long double modfl (long double \_\_x, long double \*\_\_iptr) throw (); extern long double \_\_modfl (long double \_\_x, long double \*\_\_iptr) throw ()

\_\_attribute\_\_ ((\_\_nonnull\_\_ (2)));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* A function missing in all standards: compute exponent to base ten. \*/

extern long double exp10l (long double \_\_x) throw (); extern long double \_\_exp10l (long double \_\_x) throw ();

/\* Another name occasionally used. \*/

extern long double pow10l (long double \_\_x) throw (); extern long double \_\_pow10l (long double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return exp(X) - 1. \*/

extern long double expm1l (long double \_\_x) throw (); extern long double \_\_expm1l (long double \_\_x) throw ();

#pragma empty\_line

/\* Return log(1 + X). \*/

extern long double log1pl (long double \_\_x) throw (); extern long double \_\_log1pl (long double \_\_x) throw ();

#pragma empty\_line

/\* Return the base 2 signed integral exponent of X. \*/

extern long double logbl (long double \_\_x) throw (); extern long double \_\_logbl (long double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Compute base-2 exponential of X. \*/

extern long double exp2l (long double \_\_x) throw (); extern long double \_\_exp2l (long double \_\_x) throw ();

#pragma empty\_line

/\* Compute base-2 logarithm of X. \*/

extern long double log2l (long double \_\_x) throw (); extern long double \_\_log2l (long double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Power functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Return X to the Y power. \*/

extern long double powl (long double \_\_x, long double \_\_y) throw (); extern long double \_\_powl (long double \_\_x, long double \_\_y) throw ();

#pragma empty\_line

/\* Return the square root of X. \*/

extern long double sqrtl (long double \_\_x) throw (); extern long double \_\_sqrtl (long double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return `sqrt(X\*X + Y\*Y)'. \*/

extern long double hypotl (long double \_\_x, long double \_\_y) throw (); extern long double \_\_hypotl (long double \_\_x, long double \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return the cube root of X. \*/

extern long double cbrtl (long double \_\_x) throw (); extern long double \_\_cbrtl (long double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Nearest integer, absolute value, and remainder functions. \*/

#pragma empty\_line

#pragma empty\_line

/\* Smallest integral value not less than X. \*/

extern long double ceill (long double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern long double \_\_ceill (long double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Absolute value of X. \*/

extern long double fabsl (long double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern long double \_\_fabsl (long double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Largest integer not greater than X. \*/

extern long double floorl (long double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern long double \_\_floorl (long double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Floating-point modulo remainder of X/Y. \*/

extern long double fmodl (long double \_\_x, long double \_\_y) throw (); extern long double \_\_fmodl (long double \_\_x, long double \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return 0 if VALUE is finite or NaN, +1 if it

is +Infinity, -1 if it is -Infinity. \*/

extern int \_\_isinfl (long double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Return nonzero if VALUE is finite and not NaN. \*/

extern int \_\_finitel (long double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return 0 if VALUE is finite or NaN, +1 if it

is +Infinity, -1 if it is -Infinity. \*/

extern int isinfl (long double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Return nonzero if VALUE is finite and not NaN. \*/

extern int finitel (long double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Return the remainder of X/Y. \*/

extern long double dreml (long double \_\_x, long double \_\_y) throw (); extern long double \_\_dreml (long double \_\_x, long double \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return the fractional part of X after dividing out `ilogb (X)'. \*/

extern long double significandl (long double \_\_x) throw (); extern long double \_\_significandl (long double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return X with its signed changed to Y's. \*/

extern long double copysignl (long double \_\_x, long double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern long double \_\_copysignl (long double \_\_x, long double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return representation of NaN for double type. \*/

extern long double nanl (\_\_const char \*\_\_tagb) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern long double \_\_nanl (\_\_const char \*\_\_tagb) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero if VALUE is not a number. \*/

extern int \_\_isnanl (long double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero if VALUE is not a number. \*/

extern int isnanl (long double \_\_value) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Bessel functions. \*/

extern long double j0l (long double) throw (); extern long double \_\_j0l (long double) throw ();

extern long double j1l (long double) throw (); extern long double \_\_j1l (long double) throw ();

extern long double jnl (int, long double) throw (); extern long double \_\_jnl (int, long double) throw ();

extern long double y0l (long double) throw (); extern long double \_\_y0l (long double) throw ();

extern long double y1l (long double) throw (); extern long double \_\_y1l (long double) throw ();

extern long double ynl (int, long double) throw (); extern long double \_\_ynl (int, long double) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Error and gamma functions. \*/

extern long double erfl (long double) throw (); extern long double \_\_erfl (long double) throw ();

extern long double erfcl (long double) throw (); extern long double \_\_erfcl (long double) throw ();

extern long double lgammal (long double) throw (); extern long double \_\_lgammal (long double) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* True gamma function. \*/

extern long double tgammal (long double) throw (); extern long double \_\_tgammal (long double) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Obsolete alias for `lgamma'. \*/

extern long double gammal (long double) throw (); extern long double \_\_gammal (long double) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Reentrant version of lgamma. This function uses the global variable

`signgam'. The reentrant version instead takes a pointer and stores

the value through it. \*/

extern long double lgammal\_r (long double, int \*\_\_signgamp) throw (); extern long double \_\_lgammal\_r (long double, int \*\_\_signgamp) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return the integer nearest X in the direction of the

prevailing rounding mode. \*/

extern long double rintl (long double \_\_x) throw (); extern long double \_\_rintl (long double \_\_x) throw ();

#pragma empty\_line

/\* Return X + epsilon if X < Y, X - epsilon if X > Y. \*/

extern long double nextafterl (long double \_\_x, long double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern long double \_\_nextafterl (long double \_\_x, long double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

extern long double nexttowardl (long double \_\_x, long double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern long double \_\_nexttowardl (long double \_\_x, long double \_\_y) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

/\* Return the remainder of integer divison X / Y with infinite precision. \*/

extern long double remainderl (long double \_\_x, long double \_\_y) throw (); extern long double \_\_remainderl (long double \_\_x, long double \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return X times (2 to the Nth power). \*/

extern long double scalbnl (long double \_\_x, int \_\_n) throw (); extern long double \_\_scalbnl (long double \_\_x, int \_\_n) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return the binary exponent of X, which must be nonzero. \*/

extern int ilogbl (long double \_\_x) throw (); extern int \_\_ilogbl (long double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return X times (2 to the Nth power). \*/

extern long double scalblnl (long double \_\_x, long int \_\_n) throw (); extern long double \_\_scalblnl (long double \_\_x, long int \_\_n) throw ();

#pragma empty\_line

/\* Round X to integral value in floating-point format using current

rounding direction, but do not raise inexact exception. \*/

extern long double nearbyintl (long double \_\_x) throw (); extern long double \_\_nearbyintl (long double \_\_x) throw ();

#pragma empty\_line

/\* Round X to nearest integral value, rounding halfway cases away from

zero. \*/

extern long double roundl (long double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern long double \_\_roundl (long double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Round X to the integral value in floating-point format nearest but

not larger in magnitude. \*/

extern long double truncl (long double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_)); extern long double \_\_truncl (long double \_\_x) throw () \_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Compute remainder of X and Y and put in \*QUO a value with sign of x/y

and magnitude congruent `mod 2^n' to the magnitude of the integral

quotient x/y, with n >= 3. \*/

extern long double remquol (long double \_\_x, long double \_\_y, int \*\_\_quo) throw (); extern long double \_\_remquol (long double \_\_x, long double \_\_y, int \*\_\_quo) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Conversion functions. \*/

#pragma empty\_line

/\* Round X to nearest integral value according to current rounding

direction. \*/

extern long int lrintl (long double \_\_x) throw (); extern long int \_\_lrintl (long double \_\_x) throw ();

extern long long int llrintl (long double \_\_x) throw (); extern long long int \_\_llrintl (long double \_\_x) throw ();

#pragma empty\_line

/\* Round X to nearest integral value, rounding halfway cases away from

zero. \*/

extern long int lroundl (long double \_\_x) throw (); extern long int \_\_lroundl (long double \_\_x) throw ();

extern long long int llroundl (long double \_\_x) throw (); extern long long int \_\_llroundl (long double \_\_x) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Return positive difference between X and Y. \*/

extern long double fdiml (long double \_\_x, long double \_\_y) throw (); extern long double \_\_fdiml (long double \_\_x, long double \_\_y) throw ();

#pragma empty\_line

/\* Return maximum numeric value from X and Y. \*/

extern long double fmaxl (long double \_\_x, long double \_\_y) throw (); extern long double \_\_fmaxl (long double \_\_x, long double \_\_y) throw ();

#pragma empty\_line

/\* Return minimum numeric value from X and Y. \*/

extern long double fminl (long double \_\_x, long double \_\_y) throw (); extern long double \_\_fminl (long double \_\_x, long double \_\_y) throw ();

#pragma empty\_line

#pragma empty\_line

/\* Classify given number. \*/

extern int \_\_fpclassifyl (long double \_\_value) throw ()

\_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

/\* Test for negative number. \*/

extern int \_\_signbitl (long double \_\_value) throw ()

\_\_attribute\_\_ ((\_\_const\_\_));

#pragma empty\_line

#pragma empty\_line

/\* Multiply-add function computed as a ternary operation. \*/

extern long double fmal (long double \_\_x, long double \_\_y, long double \_\_z) throw (); extern long double \_\_fmal (long double \_\_x, long double \_\_y, long double \_\_z) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return X times (2 to the Nth power). \*/

extern long double scalbl (long double \_\_x, long double \_\_n) throw (); extern long double \_\_scalbl (long double \_\_x, long double \_\_n) throw ();

#pragma line 147 "/usr/include/math.h" 2 3 4

#pragma line 161 "/usr/include/math.h" 3 4

/\* This variable is used by `gamma' and `lgamma'. \*/

extern int signgam;

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* ISO C99 defines some generic macros which work on any data type. \*/

#pragma empty\_line

#pragma empty\_line

/\* Get the architecture specific values describing the floating-point

evaluation. The following symbols will get defined:

#pragma empty\_line

float\_t floating-point type at least as wide as `float' used

to evaluate `float' expressions

double\_t floating-point type at least as wide as `double' used

to evaluate `double' expressions

#pragma empty\_line

FLT\_EVAL\_METHOD

Defined to

0 if `float\_t' is `float' and `double\_t' is `double'

1 if `float\_t' and `double\_t' are `double'

2 if `float\_t' and `double\_t' are `long double'

else `float\_t' and `double\_t' are unspecified

#pragma empty\_line

INFINITY representation of the infinity value of type `float'

#pragma empty\_line

FP\_FAST\_FMA

FP\_FAST\_FMAF

FP\_FAST\_FMAL

If defined it indicates that the `fma' function

generally executes about as fast as a multiply and an add.

This macro is defined only iff the `fma' function is

implemented directly with a hardware multiply-add instructions.

#pragma empty\_line

FP\_ILOGB0 Expands to a value returned by `ilogb (0.0)'.

FP\_ILOGBNAN Expands to a value returned by `ilogb (NAN)'.

#pragma empty\_line

DECIMAL\_DIG Number of decimal digits supported by conversion between

decimal and all internal floating-point formats.

#pragma empty\_line

\*/

#pragma empty\_line

/\* All floating-point numbers can be put in one of these categories. \*/

enum

{

FP\_NAN,

#pragma empty\_line

FP\_INFINITE,

#pragma empty\_line

FP\_ZERO,

#pragma empty\_line

FP\_SUBNORMAL,

#pragma empty\_line

FP\_NORMAL

#pragma empty\_line

};

#pragma empty\_line

/\* Return number of classification appropriate for X. \*/

#pragma line 229 "/usr/include/math.h" 3 4

/\* Return nonzero value if sign of X is negative. \*/

#pragma line 241 "/usr/include/math.h" 3 4

/\* Return nonzero value if X is not +-Inf or NaN. \*/

#pragma line 253 "/usr/include/math.h" 3 4

/\* Return nonzero value if X is neither zero, subnormal, Inf, nor NaN. \*/

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero value if X is a NaN. We could use `fpclassify' but

we already have this functions `\_\_isnan' and it is faster. \*/

#pragma line 269 "/usr/include/math.h" 3 4

/\* Return nonzero value if X is positive or negative infinity. \*/

#pragma line 281 "/usr/include/math.h" 3 4

/\* Bitmasks for the math\_errhandling macro. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* By default all functions support both errno and exception handling.

In gcc's fast math mode and if inline functions are defined this

might not be true. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Support for various different standard error handling behaviors. \*/

typedef enum

{

\_IEEE\_ = -1, /\* According to IEEE 754/IEEE 854. \*/

\_SVID\_, /\* According to System V, release 4. \*/

\_XOPEN\_, /\* Nowadays also Unix98. \*/

\_POSIX\_,

\_ISOC\_ /\* Actually this is ISO C99. \*/

} \_LIB\_VERSION\_TYPE;

#pragma empty\_line

/\* This variable can be changed at run-time to any of the values above to

affect floating point error handling behavior (it may also be necessary

to change the hardware FPU exception settings). \*/

extern \_LIB\_VERSION\_TYPE \_LIB\_VERSION;

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* In SVID error handling, `matherr' is called with this description

of the exceptional condition.

#pragma empty\_line

We have a problem when using C++ since `exception' is a reserved

name in C++. \*/

#pragma empty\_line

struct \_\_exception

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

{

int type;

char \*name;

double arg1;

double arg2;

double retval;

};

#pragma empty\_line

#pragma empty\_line

extern int matherr (struct \_\_exception \*\_\_exc) throw ();

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Types of exceptions in the `type' field. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* SVID mode specifies returning this large value instead of infinity. \*/

#pragma line 360 "/usr/include/math.h" 3 4

/\* Some useful constants. \*/

#pragma line 377 "/usr/include/math.h" 3 4

/\* The above constants are not adequate for computation using `long double's.

Therefore we provide as an extension constants with similar names as a

GNU extension. Provide enough digits for the 128-bit IEEE quad. \*/

#pragma line 397 "/usr/include/math.h" 3 4

/\* When compiling in strict ISO C compatible mode we must not use the

inline functions since they, among other things, do not set the

`errno' variable correctly. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* ISO C99 defines some macros to compare number while taking care for

unordered numbers. Many FPUs provide special instructions to support

these operations. Generic support in GCC for these as builtins went

in before 3.0.0, but not all cpus added their patterns. We define

versions that use the builtins here, and <bits/mathinline.h> will

undef/redefine as appropriate for the specific GCC version in use. \*/

#pragma line 419 "/usr/include/math.h" 3 4

/\* Get machine-dependent inline versions (if there are any). \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Define special entry points to use when the compiler got told to

only expect finite results. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* If we've still got undefined comparison macros, provide defaults. \*/

#pragma empty\_line

/\* Return nonzero value if X is greater than Y. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero value if X is greater than or equal to Y. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero value if X is less than Y. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero value if X is less than or equal to Y. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero value if either X is less than Y or Y is less than X. \*/

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

/\* Return nonzero value if arguments are unordered. \*/

#pragma line 483 "/usr/include/math.h" 3 4

}

#pragma line 46 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/cmath" 2 3

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

// Get rid of those macros defined in <math.h> in lieu of real functions.

#pragma line 76 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/cmath" 3

namespace std \_\_attribute\_\_ ((\_\_visibility\_\_ ("default")))

{

#pragma empty\_line

#pragma empty\_line

inline double

abs(double \_\_x)

{ return \_\_builtin\_fabs(\_\_x); }

#pragma empty\_line

inline float

abs(float \_\_x)

{ return \_\_builtin\_fabsf(\_\_x); }

#pragma empty\_line

inline long double

abs(long double \_\_x)

{ return \_\_builtin\_fabsl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

abs(\_Tp \_\_x)

{ return \_\_builtin\_fabs(\_\_x); }

#pragma empty\_line

using ::acos;

#pragma empty\_line

inline float

acos(float \_\_x)

{ return \_\_builtin\_acosf(\_\_x); }

#pragma empty\_line

inline long double

acos(long double \_\_x)

{ return \_\_builtin\_acosl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

acos(\_Tp \_\_x)

{ return \_\_builtin\_acos(\_\_x); }

#pragma empty\_line

using ::asin;

#pragma empty\_line

inline float

asin(float \_\_x)

{ return \_\_builtin\_asinf(\_\_x); }

#pragma empty\_line

inline long double

asin(long double \_\_x)

{ return \_\_builtin\_asinl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

asin(\_Tp \_\_x)

{ return \_\_builtin\_asin(\_\_x); }

#pragma empty\_line

using ::atan;

#pragma empty\_line

inline float

atan(float \_\_x)

{ return \_\_builtin\_atanf(\_\_x); }

#pragma empty\_line

inline long double

atan(long double \_\_x)

{ return \_\_builtin\_atanl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

atan(\_Tp \_\_x)

{ return \_\_builtin\_atan(\_\_x); }

#pragma empty\_line

using ::atan2;

#pragma empty\_line

inline float

atan2(float \_\_y, float \_\_x)

{ return \_\_builtin\_atan2f(\_\_y, \_\_x); }

#pragma empty\_line

inline long double

atan2(long double \_\_y, long double \_\_x)

{ return \_\_builtin\_atan2l(\_\_y, \_\_x); }

#pragma empty\_line

template<typename \_Tp, typename \_Up>

inline

typename \_\_gnu\_cxx::\_\_promote\_2<\_Tp, \_Up>::\_\_type

atan2(\_Tp \_\_y, \_Up \_\_x)

{

typedef typename \_\_gnu\_cxx::\_\_promote\_2<\_Tp, \_Up>::\_\_type \_\_type;

return atan2(\_\_type(\_\_y), \_\_type(\_\_x));

}

#pragma empty\_line

using ::ceil;

#pragma empty\_line

inline float

ceil(float \_\_x)

{ return \_\_builtin\_ceilf(\_\_x); }

#pragma empty\_line

inline long double

ceil(long double \_\_x)

{ return \_\_builtin\_ceill(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

ceil(\_Tp \_\_x)

{ return \_\_builtin\_ceil(\_\_x); }

#pragma empty\_line

using ::cos;

#pragma empty\_line

inline float

cos(float \_\_x)

{ return \_\_builtin\_cosf(\_\_x); }

#pragma empty\_line

inline long double

cos(long double \_\_x)

{ return \_\_builtin\_cosl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

cos(\_Tp \_\_x)

{ return \_\_builtin\_cos(\_\_x); }

#pragma empty\_line

using ::cosh;

#pragma empty\_line

inline float

cosh(float \_\_x)

{ return \_\_builtin\_coshf(\_\_x); }

#pragma empty\_line

inline long double

cosh(long double \_\_x)

{ return \_\_builtin\_coshl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

cosh(\_Tp \_\_x)

{ return \_\_builtin\_cosh(\_\_x); }

#pragma empty\_line

using ::exp;

#pragma empty\_line

inline float

exp(float \_\_x)

{ return \_\_builtin\_expf(\_\_x); }

#pragma empty\_line

inline long double

exp(long double \_\_x)

{ return \_\_builtin\_expl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

exp(\_Tp \_\_x)

{ return \_\_builtin\_exp(\_\_x); }

#pragma empty\_line

using ::fabs;

#pragma empty\_line

inline float

fabs(float \_\_x)

{ return \_\_builtin\_fabsf(\_\_x); }

#pragma empty\_line

inline long double

fabs(long double \_\_x)

{ return \_\_builtin\_fabsl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

fabs(\_Tp \_\_x)

{ return \_\_builtin\_fabs(\_\_x); }

#pragma empty\_line

using ::floor;

#pragma empty\_line

inline float

floor(float \_\_x)

{ return \_\_builtin\_floorf(\_\_x); }

#pragma empty\_line

inline long double

floor(long double \_\_x)

{ return \_\_builtin\_floorl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

floor(\_Tp \_\_x)

{ return \_\_builtin\_floor(\_\_x); }

#pragma empty\_line

using ::fmod;

#pragma empty\_line

inline float

fmod(float \_\_x, float \_\_y)

{ return \_\_builtin\_fmodf(\_\_x, \_\_y); }

#pragma empty\_line

inline long double

fmod(long double \_\_x, long double \_\_y)

{ return \_\_builtin\_fmodl(\_\_x, \_\_y); }

#pragma empty\_line

using ::frexp;

#pragma empty\_line

inline float

frexp(float \_\_x, int\* \_\_exp)

{ return \_\_builtin\_frexpf(\_\_x, \_\_exp); }

#pragma empty\_line

inline long double

frexp(long double \_\_x, int\* \_\_exp)

{ return \_\_builtin\_frexpl(\_\_x, \_\_exp); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

frexp(\_Tp \_\_x, int\* \_\_exp)

{ return \_\_builtin\_frexp(\_\_x, \_\_exp); }

#pragma empty\_line

using ::ldexp;

#pragma empty\_line

inline float

ldexp(float \_\_x, int \_\_exp)

{ return \_\_builtin\_ldexpf(\_\_x, \_\_exp); }

#pragma empty\_line

inline long double

ldexp(long double \_\_x, int \_\_exp)

{ return \_\_builtin\_ldexpl(\_\_x, \_\_exp); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

ldexp(\_Tp \_\_x, int \_\_exp)

{ return \_\_builtin\_ldexp(\_\_x, \_\_exp); }

#pragma empty\_line

using ::log;

#pragma empty\_line

inline float

log(float \_\_x)

{ return \_\_builtin\_logf(\_\_x); }

#pragma empty\_line

inline long double

log(long double \_\_x)

{ return \_\_builtin\_logl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

log(\_Tp \_\_x)

{ return \_\_builtin\_log(\_\_x); }

#pragma empty\_line

using ::log10;

#pragma empty\_line

inline float

log10(float \_\_x)

{ return \_\_builtin\_log10f(\_\_x); }

#pragma empty\_line

inline long double

log10(long double \_\_x)

{ return \_\_builtin\_log10l(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

log10(\_Tp \_\_x)

{ return \_\_builtin\_log10(\_\_x); }

#pragma empty\_line

using ::modf;

#pragma empty\_line

inline float

modf(float \_\_x, float\* \_\_iptr)

{ return \_\_builtin\_modff(\_\_x, \_\_iptr); }

#pragma empty\_line

inline long double

modf(long double \_\_x, long double\* \_\_iptr)

{ return \_\_builtin\_modfl(\_\_x, \_\_iptr); }

#pragma empty\_line

using ::pow;

#pragma empty\_line

inline float

pow(float \_\_x, float \_\_y)

{ return \_\_builtin\_powf(\_\_x, \_\_y); }

#pragma empty\_line

inline long double

pow(long double \_\_x, long double \_\_y)

{ return \_\_builtin\_powl(\_\_x, \_\_y); }

#pragma empty\_line

#pragma empty\_line

// \_GLIBCXX\_RESOLVE\_LIB\_DEFECTS

// DR 550. What should the return type of pow(float,int) be?

inline double

pow(double \_\_x, int \_\_i)

{ return \_\_builtin\_powi(\_\_x, \_\_i); }

#pragma empty\_line

inline float

pow(float \_\_x, int \_\_n)

{ return \_\_builtin\_powif(\_\_x, \_\_n); }

#pragma empty\_line

inline long double

pow(long double \_\_x, int \_\_n)

{ return \_\_builtin\_powil(\_\_x, \_\_n); }

#pragma empty\_line

#pragma empty\_line

template<typename \_Tp, typename \_Up>

inline

typename \_\_gnu\_cxx::\_\_promote\_2<\_Tp, \_Up>::\_\_type

pow(\_Tp \_\_x, \_Up \_\_y)

{

typedef typename \_\_gnu\_cxx::\_\_promote\_2<\_Tp, \_Up>::\_\_type \_\_type;

return pow(\_\_type(\_\_x), \_\_type(\_\_y));

}

#pragma empty\_line

using ::sin;

#pragma empty\_line

inline float

sin(float \_\_x)

{ return \_\_builtin\_sinf(\_\_x); }

#pragma empty\_line

inline long double

sin(long double \_\_x)

{ return \_\_builtin\_sinl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

sin(\_Tp \_\_x)

{ return \_\_builtin\_sin(\_\_x); }

#pragma empty\_line

using ::sinh;

#pragma empty\_line

inline float

sinh(float \_\_x)

{ return \_\_builtin\_sinhf(\_\_x); }

#pragma empty\_line

inline long double

sinh(long double \_\_x)

{ return \_\_builtin\_sinhl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

sinh(\_Tp \_\_x)

{ return \_\_builtin\_sinh(\_\_x); }

#pragma empty\_line

using ::sqrt;

#pragma empty\_line

inline float

sqrt(float \_\_x)

{ return \_\_builtin\_sqrtf(\_\_x); }

#pragma empty\_line

inline long double

sqrt(long double \_\_x)

{ return \_\_builtin\_sqrtl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

sqrt(\_Tp \_\_x)

{ return \_\_builtin\_sqrt(\_\_x); }

#pragma empty\_line

using ::tan;

#pragma empty\_line

inline float

tan(float \_\_x)

{ return \_\_builtin\_tanf(\_\_x); }

#pragma empty\_line

inline long double

tan(long double \_\_x)

{ return \_\_builtin\_tanl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

tan(\_Tp \_\_x)

{ return \_\_builtin\_tan(\_\_x); }

#pragma empty\_line

using ::tanh;

#pragma empty\_line

inline float

tanh(float \_\_x)

{ return \_\_builtin\_tanhf(\_\_x); }

#pragma empty\_line

inline long double

tanh(long double \_\_x)

{ return \_\_builtin\_tanhl(\_\_x); }

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_integer<\_Tp>::\_\_value,

double>::\_\_type

tanh(\_Tp \_\_x)

{ return \_\_builtin\_tanh(\_\_x); }

#pragma empty\_line

#pragma empty\_line

} // namespace

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

// These are possible macros imported from C99-land.

#pragma line 480 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/cmath" 3

namespace std \_\_attribute\_\_ ((\_\_visibility\_\_ ("default")))

{

#pragma line 730 "/opt/Xilinx/Vivado\_HLS/2017.2/lnx64/tools/gcc/lib/gcc/x86\_64-unknown-linux-gnu/4.6.3/../../../../include/c++/4.6.3/cmath" 3

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

fpclassify(\_Tp \_\_f)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_fpclassify(FP\_NAN, FP\_INFINITE, FP\_NORMAL,

FP\_SUBNORMAL, FP\_ZERO, \_\_type(\_\_f));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

isfinite(\_Tp \_\_f)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_isfinite(\_\_type(\_\_f));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

isinf(\_Tp \_\_f)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_isinf(\_\_type(\_\_f));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

isnan(\_Tp \_\_f)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_isnan(\_\_type(\_\_f));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

isnormal(\_Tp \_\_f)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_isnormal(\_\_type(\_\_f));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

signbit(\_Tp \_\_f)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_signbit(\_\_type(\_\_f));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

isgreater(\_Tp \_\_f1, \_Tp \_\_f2)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_isgreater(\_\_type(\_\_f1), \_\_type(\_\_f2));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

isgreaterequal(\_Tp \_\_f1, \_Tp \_\_f2)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_isgreaterequal(\_\_type(\_\_f1), \_\_type(\_\_f2));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

isless(\_Tp \_\_f1, \_Tp \_\_f2)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_isless(\_\_type(\_\_f1), \_\_type(\_\_f2));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

islessequal(\_Tp \_\_f1, \_Tp \_\_f2)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_islessequal(\_\_type(\_\_f1), \_\_type(\_\_f2));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

islessgreater(\_Tp \_\_f1, \_Tp \_\_f2)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_islessgreater(\_\_type(\_\_f1), \_\_type(\_\_f2));

}

#pragma empty\_line

template<typename \_Tp>

inline typename \_\_gnu\_cxx::\_\_enable\_if<\_\_is\_arithmetic<\_Tp>::\_\_value,

int>::\_\_type

isunordered(\_Tp \_\_f1, \_Tp \_\_f2)

{

typedef typename \_\_gnu\_cxx::\_\_promote<\_Tp>::\_\_type \_\_type;

return \_\_builtin\_isunordered(\_\_type(\_\_f1), \_\_type(\_\_f2));

}

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

} // namespace

#pragma line 70 "../../../../../../home/drsatya/Desktop/lab1/matrixmul.h" 2

using namespace std;

#pragma empty\_line

// Uncomment this line to compare TB vs HW C-model and/or RTL

//#define HW\_COSIM

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

#pragma empty\_line

typedef char mat\_a\_t;

typedef char mat\_b\_t;

typedef short result\_t;

#pragma empty\_line

// Prototype of top level function for C-synthesis

void matrixmul(

mat\_a\_t a[3][3],

mat\_b\_t b[3][3],

result\_t res[3][3]);

#pragma line 3 "../../../../../../home/drsatya/Desktop/lab1/MAT\_PIPELINE\_2.cpp" 2

#pragma empty\_line

void matrixmul(

mat\_a\_t a[3][3],

mat\_b\_t b[3][3],

result\_t res[3][3])

{

// Iterate over the rows of the A matrix

Row: for(int i = 0; i < 3; i++) {

#pragma empty\_line

// Iterate over the columns of the B matrix

Col: for(int j = 0; j < 3; j++) {

#pragma HLS PIPELINE II=1

// Do the inner product of a row of A and col of B

res[i][j] = 0;

Product: for(int k = 0; k < 3; k++) {

#pragma empty\_line

res[i][j] += a[i][k] \* b[k][j];

}

}

}

}