Rocky Enterprise Linux 9.2 Manual Pages on command 'fmal.3'

$ man fmal.3

FMA(3) Linux Programmer's Manual FMA(3)

NAME

fma, fmaf, fmal - floating-point multiply and add

SYNOPSIS

#include <math.h>

double fma(double x, double y, double z);

float fmaf(float x, float y, float z);

long double fmal(long double x, long double y, long double z);

Link with -lm.

Feature Test Macro Requirements for glibc (see feature_test_macros(7)):

fma(), fmaf(), fmal():

_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

DESCRIPTION

These functions compute x * y + z. The result is rounded as one

ternary operation according to the current rounding mode (see fenv(3)).

RETURN VALUE

These functions return the value of x * y + z, rounded as one ternary

operation.

If x or y is a NaN, a NaN is returned.

If x times y is an exact infinity, and z is an infinity with the oppo?

site sign, a domain error occurs, and a NaN is returned.

If one of x or y is an infinity, the other is 0, and z is not a NaN, a

domain error occurs, and a NaN is returned.

If one of x or y is an infinity, and the other is 0, and z is a NaN, a

domain error occurs, and a NaN is returned.

If x times y is not an infinity times zero (or vice versa), and z is a

NaN, a NaN is returned.

If the result overflows, a range error occurs, and an infinity with the

correct sign is returned.

If the result underflows, a range error occurs, and a signed 0 is re?

turned.

ERRORS

See math_error(7) for information on how to determine whether an error

has occurred when calling these functions.

The following errors can occur:

Domain error: x * y + z, or x * y is invalid and z is not a NaN

An invalid floating-point exception (FE_INVALID) is raised.

Range error: result overflow

An overflow floating-point exception (FE_OVERFLOW) is raised.

Range error: result underflow

An underflow floating-point exception (FE_UNDERFLOW) is raised.

These functions do not set errno.

VERSIONS

These functions first appeared in glibc in version 2.1.

ATTRIBUTES

For an explanation of the terms used in this section, see at?

tributes(7).

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?Interface ? Attribute ? Value ?

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?fma(), fmaf(), fmal() ? Thread safety ? MT-Safe ?

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CONFORMING TO

C99, POSIX.1-2001, POSIX.1-2008.

SEE ALSO

remainder(3), remquo(3)

COLOPHON

This page is part of release 5.10 of the Linux man-pages project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at https://www.kernel.org/doc/man-pages/.

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