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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'log.3' command

$ man log.3

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

NAME

log, logf, logl - natural logarithmic function

SYNOPSIS

#include <math.h>

double log(double x);

float logf(float x);

long double logl(long double x);

Link with -lm.

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

logf(), logl():

_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

|| /* Since glibc 2.19: */ _DEFAULT_SOURCE

|| /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE

DESCRIPTION

These functions return the natural logarithm of x.

RETURN VALUE

On success, these functions return the natural logarithm of x.

If x is a NaN, a NaN is returned.

If x is 1, the result is +0.

If x is positive infinity, positive infinity is returned.

If x is zero, then a pole error occurs, and the functions return

-HUGE_VAL, -HUGE_VALF, or -HUGE_VALL, respectively.

If x is negative (including negative infinity), then a domain error oc?
curs, and a NaN (not a number) is returned.

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 is negative

errno is set to EDOM. An invalid floating-point exception (FE_INVALID) is raised.

Pole error: x is zero

errno is set to ERANGE. A divide-by-zero floating-point excep? tion (FE_DIVBYZERO) is raised.

ATTRIBUTES

For an explanation of the terms used in this section, see at? tributes(7).

Interface	Attribute	Value
log(), logf(), logl()	Thread safety	MT-Safe

CONFORMING TO

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

The variant returning double also conforms to SVr4, 4.3BSD, C89.

BUGS

In glibc 2.5 and earlier, taking the log() of a NaN produces a bogus invalid floating-point (FE_INVALID) exception.

SEE ALSO

cbrt(3), clog(3), log10(3), log1p(3), log2(3), sqrt(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/.