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### ***Rocky Enterprise Linux 9.2 Manual Pages on command 'logl.3'***

**\$ man logl.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 occurs, 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 exception (FE\_DIVBYZERO) is raised.

## ATTRIBUTES

For an explanation of the terms used in this section, see `attributes(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/>.