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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'log1p.3' command

$ man log1p.3

LOG1P(3) Linux Programmer's Manual LOG1P(3)

NAME

log1p, log1pf, log1pl - logarithm of 1 plus argument

SYNOPSIS

```
#include <math.h>

double log1p(double x);

float log1pf(float x);

long double log1pl(long double x);
```

Link with -lm.

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

log1p():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
    || _XOPEN_SOURCE >= 500
    || /* Since glibc 2.19: */ _DEFAULT_SOURCE
    || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

log1pf(), log1pl():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
    || /* Since glibc 2.19: */ _DEFAULT_SOURCE
    || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

DESCRIPTION

These functions return a value equivalent to

```
log (1 + x)
```

The result is computed in a way that is accurate even if the value of x

is near zero.

RETURN VALUE

On success, these functions return the natural logarithm of (1 + x).

If x is a NaN, a NaN is returned.

If x is positive infinity, positive infinity is returned.

If x is -1, a pole error occurs, and the functions return -HUGE_VAL, -HUGE_VALF, or -HUGE_VALL, respectively.

If x is less than -1 (including negative infinity), 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 less than -1

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

Pole error: x is -1

errno is set to ERANGE (but see BUGS). A divide-by-zero float? ing-point exception (FE_DIVBYZERO) is raised.

ATTRIBUTES

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

Interface	Attribute	Value
log1p(), log1pf(), log1pl()	Thread safety	MT-Safe

CONFORMING TO

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

BUGS

Before version 2.22, the glibc implementation did not set errno to EDOM when a domain error occurred.

Before version 2.22, the glibc implementation did not set errno to

ERANGE when a range error occurred.

SEE ALSO

exp(3), expm1(3), log(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/.