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

**\$ man logbl.3**

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

NAME

logb, logbf, logbl - get exponent of a floating-point value

SYNOPSIS

```
#include <math.h>
```

```
double logb(double x);
```

```
float logbf(float x);
```

```
long double logbl(long double x);
```

Link with -lm.

Feature Test Macro Requirements for glibc (see feature\_test\_macros(7)):

logb():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
```

```
|| _XOPEN_SOURCE >= 500
```

```
|| /* Since glibc 2.19: */ _DEFAULT_SOURCE
```

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

logbf(), logbl():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
```

```
|| /* Since glibc 2.19: */ _DEFAULT_SOURCE
```

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

DESCRIPTION

These functions extract the exponent from the internal floating-point representation of *x* and return it as a floating-point value. The integer constant `FLT_RADIX`, defined in `<float.h>`, indicates the radix used for the system's floating-point representation. If

FLT\_RADIX is 2, logb(x) is equal to floor(log2(x)), except that it is probably faster.

If x is subnormal, logb() returns the exponent x would have if it were normalized.

## RETURN VALUE

On success, these functions return the exponent of x.

If x is a NaN, a NaN 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 infinity or positive infinity, then positive infinity 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:

Pole error: x is 0

A divide-by-zero floating-point exception (FE\_DIVBYZERO) is raised.

These functions do not set errno.

## ATTRIBUTES

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

??

?Interface            ? Attribute   ? Value   ?

??

?logb(), logbf(), logbl() ? Thread safety ? MT-Safe ?

??

## CONFORMING TO

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

## SEE ALSO

ilogb(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/>.