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

\$ man ilogb.3

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

NAME

ilogb, ilogbf, ilogbl - get integer exponent of a floating-point value

SYNOPSIS

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

```
int ilogb(double x);
```

```
int ilogbf(float x);
```

```
int ilogbl(long double x);
```

Link with -lm.

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

ilogb():

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

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

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

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

ilogbf(), ilogbl():

```
_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 exponent part of their argument as a signed integer. When no error occurs, these functions are equivalent to the corresponding `logb(3)` functions, cast to `int`.

RETURN VALUE

On success, these functions return the exponent of `x`, as a signed integer.

If `x` is zero, then a domain error occurs, and the functions return `FP_ILOGB0`.

If `x` is a NaN, then a domain error occurs, and the functions return `FP_ILOGBNAN`.

If `x` is negative infinity or positive infinity, then a domain error occurs, and the functions return `INT_MAX`.

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 0 or a NaN

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

Domain error: `x` is an infinity

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

ATTRIBUTES

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

??

?Interface ? Attribute ? Value ?

??

?ilogb(), ilogbf(), ilogbl() ? Thread safety ? MT-Safe ?

??

CONFORMING TO

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

BUGS

Before version 2.16, the following bugs existed in the glibc implementation of these functions:

- * The domain error case where x is 0 or a NaN did not cause `errno` to be set or (on some architectures) raise a floating-point exception.
- * The domain error case where x is an infinity did not cause `errno` to be set or raise a floating-point exception.

SEE ALSO

`log(3)`, `logb(3)`, `significand(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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ILOGB(3)