



### ***Linux Ubuntu 26.04 Manual Pages on command 'ilogbl.3'***

***\$ man ilogbl.3***

ilogb(3)                      Library Functions Manual                      ilogb(3)

#### NAME

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

#### LIBRARY

Math library (libm, -lm)

#### SYNOPSIS

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

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

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

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

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

ilogbf(), ilogbl():

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

```
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```
|| /* glibc <= 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   |
| <code>ilogb()</code> , <code>ilogbf()</code> , <code>ilogbl()</code> | Thread safety | MT-Safe |

## STANDARDS

C11, POSIX.1-2008.

## HISTORY

C99, POSIX.1-2001.

## BUGS

Before glibc 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)

Linux man-pages 6.17

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ilogb(3)