



Linux Ubuntu 26.04 Manual Pages on command 'scalbnf.3'

\$ man scalbnf.3

scalbn(3) Library Functions Manual scalbn(3)

NAME

scalbn, scalbnf, scalbnl, scalbln, scalblnf, scalblnl - scale by an integer power of radix

LIBRARY

Math library (libm, -lm)

SYNOPSIS

```
#include <math.h>

double scalbn(double x, long e);

float scalbnf(float x, long e);

long double scalbnl(long double x, long e);

double scalbn(double x, int e);

float scalbnf(float x, int e);

long double scalbnl(long double x, int e);
```

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

```
scalbn(), scalbnf(), scalbnl():

    _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
    || /* Since glibc 2.19: */ _DEFAULT_SOURCE

scalbn(), scalbnf(), scalbnl():

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

DESCRIPTION

These functions multiply their first argument *x* by FLT_RADIX (probably 2) to the power of *e*,

that is:

$x * FLT_RADIX ** e$

The definition of FLT_RADIX can be obtained by including <float.h>.

RETURN VALUE

On success, these functions return $x * FLT_RADIX ** e$.

If x is a NaN, a NaN is returned.

If x is positive infinity (negative infinity), positive infinity (negative infinity) is returned.

If x is +0 (-0), +0 (-0) is returned.

If the result overflows, a range error occurs, and the functions return HUGE_VAL, HUGE_VALF, or HUGE_VALL, respectively, with a sign the same as x.

If the result underflows, a range error occurs, and the functions return zero, with a sign the same as x.

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:

Range error, overflow

An overflow floating-point exception (FE_OVERFLOW) is raised.

Range error, underflow

errno is set to ERANGE. An underflow floating-point exception (FE_UNDERFLOW) is raised.

ATTRIBUTES

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

Interface Attribute Value

Interface

Attribute Value

Interface Attribute Value

scalbn(), scalbnf(), scalbni(), scalbln(), scalblnf(), Thread safety MT-Safe

scalblni() ? ?

Interface Attribute Value

STANDARDS

C11, POSIX.1-2008.

HISTORY

glibc 2.1. C99, POSIX.1-2001.

HISTORY

These functions differ from the obsolete functions described in [scalb\(3\)](#) in the type of their second argument. The functions described on this page have a second argument of an integral type, while those in [scalb\(3\)](#) have a second argument of type double.

NOTES

If `FLT_RADIX` equals 2 (which is usual), then `scalbn()` is equivalent to `ldexp(3)`.

BUGS

Before glibc 2.20, these functions did not set `errno` for range errors.

SEE ALSO

[ldexp\(3\)](#), [scalb\(3\)](#)

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[scalbln\(3\)](#)