



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

**C:\>man scalbnf.3**

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

### NAME

scalbn, scalbnf, scalbnl, scalbln, scalblnf, scalblnl - multiply floating-point number by integral power of radix

### SYNOPSIS

```
#include <math.h>

double scalbn(double x, long int exp);
float scalblnf(float x, long int exp);
long double scalblnl(long double x, long int exp);
double scalbn(double x, int exp);
float scalbnf(float x, int exp);
long double scalbnl(long double x, int exp);

Link with -lm.
```

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

scalbln(), scalblnf(), scalblnl():

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

### DESCRIPTION

These functions multiply their first argument  $x$  by FLT\_RADIX (probably 2) to the power of  $exp$ , that is:

$$x * FLT\_RADIX ** exp$$

The definition of FLT\_RADIX can be obtained by including <float.h>.

## RETURN VALUE

On success, these functions return  $x * FLT\_RADIX ** exp$ .

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

An underflow floating-point exception (FE\_UNDERFLOW) is raised.

These functions do not set errno.

## VERSIONS

These functions first appeared in glibc in version 2.1.

## ATTRIBUTES

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

??

?Interface                    ? Attribute    ? Value    ?

??

?scalbn(), scalbnf(), scalbnl(),    ? Thread safety ? MT-Safe ?

?scalbln(), scalblnf(), scalblnl() ?                    ?                    ?

??

## CONFORMING TO

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

## NOTES

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`.

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

## SEE ALSO

`ldexp(3)`, `scalb(3)`

## COLOPHON

This page is part of release 5.05 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/>.

2017-09-15

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