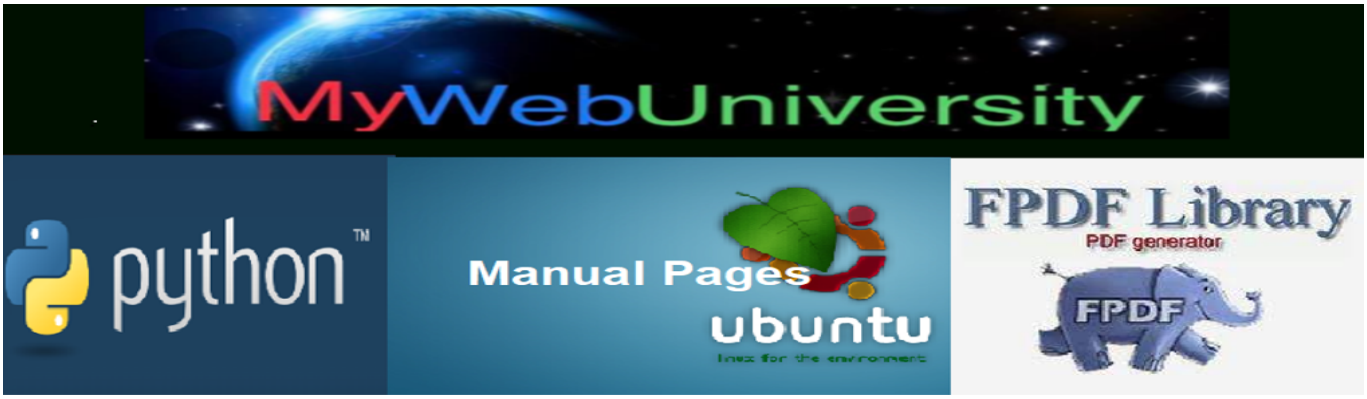

Rocky Enterprise Linux 9.2 Manual Pages on command 'scalbl.3'

$ man scalbl.3

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

NAME

scalb, scalbf, scalbl - multiply floating-point number by integral power of radix (OBSO?

LETE)

SYNOPSIS

```
#include <math.h>

double scalb(double x, double exp);

float scalbf(float x, float exp);

long double scalbl(long double x, long double exp);
```

Link with -lm.

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

scalb():

```
_XOPEN_SOURCE >= 500
    || /* Since glibc 2.19: */ _DEFAULT_SOURCE
    || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

scalbf(), scalbl():

```
_XOPEN_SOURCE >= 600
    || /* 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 or exp is a NaN, a NaN is returned.

If x is positive infinity (negative infinity), and exp is not negative infinity, positive infinity (negative infinity) is returned.

If x is +0 (-0), and exp is not positive infinity, +0 (-0) is returned.

If x is zero, and exp is positive infinity, a domain error occurs, and a NaN is returned.

If x is an infinity, and exp is negative infinity, a domain error occurs, and a NaN is re? turned.

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:

Domain error: x is 0, and exp is positive infinity, or x is positive infinity and exp is negative infinity and the other argument is not a NaN

errno is set to EDOM. An invalid floating-point exception (FE_INVALID) is raised.

Range error, overflow

errno is set to ERANGE. 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
scalb(), scalbf(), scalbl()	Thread safety	MT-Safe

??

CONFORMING TO

scalb() is specified in POSIX.1-2001, but marked obsolescent. POSIX.1-2008 removes the specification of scalb(), recommending the use of scalbln(3), scalblnf(3), or scalblnl(3) instead. The scalb() function is from 4.3BSD.

scalbf() and scalbl() are unstandardized; scalbf() is nevertheless present on several other systems

BUGS

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

SEE ALSO

ldexp(3), scalbln(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/.