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

#### ***\$ man ldexpl.3***

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

#### NAME

ldexp, ldexpf, ldexpl - multiply floating-point number by integral power of 2

#### SYNOPSIS

```
#include <math.h>

double ldexp(double x, int exp);

float ldexpf(float x, int exp);

long double ldexpl(long double x, int exp);
```

Link with -lm.

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

```
ldexpf(), ldexpl():

    _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 result of multiplying the floating-point number  $x$  by 2 raised to the power  $exp$ .

#### RETURN VALUE

On success, these functions return  $x * (2^{exp})$ .

If  $exp$  is zero, then  $x$  is returned.

If  $x$  is a NaN, a NaN is returned.

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

If the result underflows, a range error occurs, and zero 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.

## 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

`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   ?

??

?ldexp(), ldexpf(), ldexpl() ? Thread safety ? MT-Safe ?

??

## CONFORMING TO

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

The variant returning double also conforms to SVr4, 4.3BSD, C89.

## SEE ALSO

`frexp(3)`, `modf(3)`, `scalbn(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/>.