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

\$ man ldexp.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)):

```
ldexp(), 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 $x * (2^{\text{exp}})$.

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

`fexp(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/>.

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