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

$ man nextafterl.3

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

NAME

    nextafter, nextafterf, nextafterl, nexttoward, nexttowardf, nexttowardl - floating-point

    number manipulation

SYNOPSIS

    #include <math.h>

    double nextafter(double x, double y);

    float nextafterf(float x, float y);

    long double nextafterl(long double x, long double y);

    double nexttoward(double x, long double y);

    float nexttowardf(float x, long double y);

    long double nexttowardl(long double x, long double y);

    Link with -lm.

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

    nextafter():

      _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

        || _XOPEN_SOURCE >= 500

        || /* Since glibc 2.19: */ _DEFAULT_SOURCE

        || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE

    nextafterf(), nextafterl():

      _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

        || /* Since glibc 2.19: */ _DEFAULT_SOURCE

        || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE

nexttoward(), nexttowardf(), nexttowardl():

    _XOPEN_SOURCE >= 600 || _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

DESCRIPTION

The nextafter(), nextafterf(), and nextafterl() functions return the next representable floating-point value following x in the direction of y. If y is less than x, these func? tions will return the largest representable number less than x.

If x equals y, the functions return y.

The nexttoward(), nexttowardf(), and nexttowardl() functions do the same as the corre? sponding nextafter() functions, except that they have a long double second argument.

RETURN VALUE

On success, these functions return the next representable floating-point value after x in the direction of y.

If x equals y, then y (cast to the same type as x) is returned.

If x or y is a NaN, a NaN is returned.

If x is finite, and the result would overflow, a range error occurs, and the functions re? turn HUGE_VAL, HUGE_VALF, or HUGE_VALL, respectively, with the correct mathematical sign.

If x is not equal to y, and the correct function result would be subnormal, zero, or un? derflow, a range error occurs, and either the correct value (if it can be represented), or 0.0, is returned.

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: result overflow

    errno is set to ERANGE. An overflow floating-point exception (FE_OVERFLOW) is raised.

Range error: result is subnormal or underflows

    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 ?

??

?nextafter(), nextafterf(),   ? Thread safety ? MT-Safe ?

?nextafterl(), nexttoward(), ?   ?   ?

?nexttowardf(), nexttowardl() ?   ?   ?

??

CONFORMING TO

C99, POSIX.1-2001, POSIX.1-2008. This function is defined in IEC 559 (and the appendix

with recommended functions in IEEE 754/IEEE 854).

BUGS

In glibc version 2.5 and earlier, these functions do not raise an underflow floating-point

(FE_UNDERFLOW) exception when an underflow occurs.

Before glibc version 2.23 these functions did not set errno.

SEE ALSO

nearbyint(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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