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

$ man rintf.3

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

NAME

nearbyint, nearbyintf, nearbyintl, rint, rintf, rintl - round to near?

est integer

SYNOPSIS

#include <math.h>

double nearbyint(double x);

float nearbyintf(float x);

long double nearbyintl(long double x);

double rint(double x);

float rintf(float x);

long double rintl(long double x);

Link with -lm.

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

nearbyint(), nearbyintf(), nearbyintl():

_POSIX_C_SOURCE >= 200112L || _ISOC99_SOURCE

rint():

_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

|| _XOPEN_SOURCE >= 500

|| /* Since glibc 2.19: */ _DEFAULT_SOURCE

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

rintf(), rintl():

_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

|| /* Since glibc 2.19: */ _DEFAULT_SOURCE

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

DESCRIPTION

The nearbyint(), nearbyintf(), and nearbyintl() functions round their argument to an integer value in floating-point format, using the cur? rent rounding direction (see fesetround(3)) and without raising the in? exact exception. When the current rounding direction is to nearest, these functions round halfway cases to the even integer in accordance with IEEE-754.

The rint(), rintf(), and rintl() functions do the same, but will raise the inexact exception (FE_INEXACT, checkable via fetestexcept(3)) when the result differs in value from the argument.

RETURN VALUE

These functions return the rounded integer value.

If x is integral, +0, -0, NaN, or infinite, x itself is returned.

ERRORS

No errors occur. POSIX.1-2001 documents a range error for overflows, but see NOTES.

ATTRIBUTES

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

Interface	Attribute	Value
nearbyint(), nearbyintf(), nearbyintl(), rint(), rintf(), rintl()	Thread safety	MT-Safe

CONFORMING TO

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

NOTES

SUSv2 and POSIX.1-2001 contain text about overflow (which might set er?
rno to ERANGE, or raise an FE_OVERFLOW exception). In practice, the result cannot overflow on any current machine, so this error-handling stuff is just nonsense. (More precisely, overflow can happen only when the maximum value of the exponent is smaller than the number of man?
tissa bits. For the IEEE-754 standard 32-bit and 64-bit floating-point numbers the maximum value of the exponent is 128 (respectively, 1024), and the number of mantissa bits is 24 (respectively, 53).)

If you want to store the rounded value in an integer type, you probably want to use one of the functions described in lrint(3) instead.

SEE ALSO

ceil(3), floor(3), lrint(3), round(3), trunc(3)

COLOPHON

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