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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'ceill.3' command

$ man ceill.3

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

NAME

ceil, ceilf, ceill - ceiling function: smallest integral value not less than argument

SYNOPSIS

```
#include <math.h>

double ceil(double x);

float ceilf(float x);

long double ceill(long double x);
```

Link with -lm.

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

ceilf(), ceill():

_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 smallest integral value that is not less than x.

For example, ceil(0.5) is 1.0, and ceil(-0.5) is 0.0.

RETURN VALUE

These functions return the ceiling of x.

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 ?
?ceil(), ceilf(), ceill()	? Thread safety	? MT-Safe ?

CONFORMING TO

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

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

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).)

The integral value returned by these functions may be too large to store in an integer type (int, long, etc.). To avoid an overflow, which will produce undefined results, an application should perform a range check on the returned value before assigning it to an integer type.

SEE ALSO

floor(3), lrint(3), nearbyint(3), rint(3), round(3), trunc(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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