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

$ man fpclassify.3

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

NAME

fpclassify, isfinite, isnormal, isnan, isinf - floating-point classifi?

cation macros

SYNOPSIS

#include <math.h>

int fpclassify(x);

int isfinite(x);

int isnormal(x);

int isnan(x);

int isinf(x);

Link with -lm.

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

fpclassify(), isfinite(), isnormal():

_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

isnan():

_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

|| _XOPEN_SOURCE

|| /* Since glibc 2.19: */ _DEFAULT_SOURCE

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

isinf():

_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L

|| /* Since glibc 2.19: */ _DEFAULT_SOURCE

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

DESCRIPTION

Floating point numbers can have special values, such as infinite or NaN. With the macro fpclassify(x) you can find out what type x is. The macro takes any floating-point expression as argument. The result is one of the following values:

FP_NAN x is "Not a Number".

FP_INFINITE x is either positive infinity or negative infinity.

FP_ZERO x is zero.

FP_SUBNORMAL x is too small to be represented in normalized format.

FP_NORMAL if nothing of the above is correct then it must be a nor? mal floating-point number.

The other macros provide a short answer to some standard questions.

isfinite(x) returns a nonzero value if (fpclassify(x) != FP_NAN && fpclassify(x) != FP_INFINITE)

isnormal(x) returns a nonzero value if (fpclassify(x) == FP_NORMAL)

isnan(x) returns a nonzero value if (fpclassify(x) == FP_NAN)

isinf(x) returns 1 if x is positive infinity, and -1 if x is nega? tive infinity.

ATTRIBUTES

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

Interface	Attribute	Value
fpclassify(), isfinite(), isnormal(), isnan(), isinf()	Thread safety	MT-Safe

CONFORMING TO

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

For isinf(), the standards merely say that the return value is nonzero if and only if the argument has an infinite value.

NOTES

In glibc 2.01 and earlier, isinf() returns a nonzero value (actually:

1) if x is positive infinity or negative infinity. (This is all that

C99 requires.)

SEE ALSO

finite(3), INFINITY(3), isgreater(3), signbit(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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