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

$ man isnan.3

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

NAME

    fpclassify, isfinite, isnormal, isnan, isinf - floating-point classification 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 expres‐ sion 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 normal 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 negative infinity.

ATTRIBUTES

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

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

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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