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

$ man fdim.3p

FDIM(3P) POSIX Programmer's Manual FDIM(3P)

PROLOG

This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.

NAME

fdim, fdimf, fdiml ? compute positive difference between two floating-point numbers

SYNOPSIS

```
#include <math.h>
double fdim(double x, double y);
float fdimf(float x, float y);
long double fdiml(long double x, long double y);
```

DESCRIPTION

The functionality described on this reference page is aligned with the ISO C standard. Any conflict between the requirements described here and the ISO C standard is unintentional. This volume of POSIX.1?2017 defers to the ISO C standard.

These functions shall determine the positive difference between their arguments. If x is greater than y, x-y is returned. If x is less than or equal to y, +0 is returned.

An application wishing to check for error situations should set errno

to zero and call feclearexcept(FE_ALL_EXCEPT) before calling these functions. On return, if errno is non-zero or fetestexcept(FE_INVALID | FE_DIVBYZERO | FE_OVERFLOW | FE_UNDERFLOW) is non-zero, an error has occurred.

RETURN VALUE

Upon successful completion, these functions shall return the positive difference value.

If x-y is positive and overflows, a range error shall occur and fdim(), fdimf(), and fdiml() shall return the value of the macro HUGE_VAL, HUGE_VALF, and HUGE_VALL, respectively.

If the correct value would cause underflow, a range error may occur, and fdim(), fdimf(), and fdiml() shall return the correct value, or (if the IEC 60559 Floating-Point option is not supported) an implementa? tion-defined value no greater in magnitude than DBL_MIN, FLT_MIN, and LDBL_MIN, respectively.

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

ERRORS

The fdim() function shall fail if:

Range Error The result overflows.

If the integer expression (math_errhandling & MATH_ERRNO) is non-zero, then errno shall be set to [ERANGE]. If the integer expression (math_errhandling & MATH_ERREXCEPT) is non-zero, then the overflow floating-point exception shall be raised.

The fdim() function may fail if:

Range Error The result underflows.

If the integer expression (math_errhandling & MATH_ERRNO) is non-zero, then errno shall be set to [ERANGE]. If the integer expression (math_errhandling & MATH_ERREXCEPT) is non-zero, then the underflow floating-point exception shall be raised.

The following sections are informative.

EXAMPLES

None.

APPLICATION USAGE

On error, the expressions (math_errhandling & MATH_ERRNO) and (math_er?
rhandling & MATH_ERREXCEPT) are independent of each other, but at least
one of them must be non-zero.

RATIONALE

None.

FUTURE DIRECTIONS

None.

SEE ALSO

feclearexcept(), fetestexcept(), fmax(), fmin()

Section 4.20, Treatment of Error Conditions for Mathematical Functions,

<math.h>