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## *Red Hat Enterprise Linux Release 9.2 Manual Pages on 'log2.3p' command*

***$ man log2.3p***

LOG2(3P) POSIX Programmer's Manual LOG2(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

log2, log2f, log2l ? compute base 2 logarithm functions

SYNOPSIS

```
#include <math.h>
double log2(double x);
float log2f(float x);
long double log2l(long double x);
```

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 compute the base 2 logarithm of their argument x, log2(x).

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 base 2 logarithm of x.

If x is ?0, a pole error shall occur and log2(), log2f(), and log2l() shall return -HUGE_VAL, -HUGE_VALF, and -HUGE_VALL, respectively.

For finite values of x that are less than 0, or if x is -Inf, a domain error shall occur, and either a NaN (if supported), or an implementa? tion-defined value shall be returned.

If x is NaN, a NaN shall be returned.

If x is 1, +0 shall be returned.

If x is +Inf, x shall be returned.

ERRORS

These functions shall fail if:

Domain Error

The finite value of x is less than zero, or x is -Inf.

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

Pole Error The value of x is zero.

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 divide-by-zero 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(), log()

The Base Definitions volume of POSIX.1?2017, Section 4.20, Treatment of Error Conditions for Mathematical Functions, <math.h>