



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

\$ man erfl.3

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

NAME

 erf, erff, erfl - error function

SYNOPSIS

```
#include <math.h>
```

```
double erf(double x);
```

```
float erff(float x);
```

```
long double erfl(long double x);
```

Link with -lm.

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

erf():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L || _XOPEN_SOURCE
```

```
    || /* Since glibc 2.19: */ _DEFAULT_SOURCE
```

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

erff(), erfl():

```
_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 error function of x , defined as

$$\operatorname{erf}(x) = \frac{2}{\sqrt{\pi}} \int_0^x \exp(-t^2) dt$$

RETURN VALUE

On success, these functions return the value of the error function of

x , a value in the range $[-1, 1]$.

If x is a NaN, a NaN is returned.

If x is $+0$ (-0), $+0$ (-0) is returned.

If x is positive infinity (negative infinity), $+1$ (-1) is returned.

If x is subnormal, a range error occurs, and the return value is

$2x/\sqrt{\pi}$.

ERRORS

See `math_error(7)` for information on how to determine whether an error has occurred when calling these functions.

The following errors can occur:

Range error: result underflow (x is subnormal)

An underflow floating-point exception (`FE_UNDERFLOW`) is raised.

These functions do not set `errno`.

ATTRIBUTES

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

??

?Interface ? Attribute ? Value ?

??

?`erf()`, `erff()`, `erfl()` ? Thread safety ? MT-Safe ?

??

CONFORMING TO

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

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

SEE ALSO

`cerf(3)`, `erfc(3)`, `exp(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/>.

GNU

2017-09-15

ERF(3)