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### ***Rocky Enterprise Linux 9.2 Manual Pages on command 'acoshf.3'***

**\$ man acoshf.3**

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

NAME

acosh, acoshf, acoshl - inverse hyperbolic cosine function

SYNOPSIS

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

```
double acosh(double x);
```

```
float acoshf(float x);
```

```
long double acoshl(long double x);
```

Link with -lm.

Feature Test Macro Requirements for glibc (see feature\_test\_macros(7)):

acosh():

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

```
|| _XOPEN_SOURCE >= 500
```

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

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

acoshf(), acoshl():

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

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

|| /\* Glibc versions <= 2.19: \*/ \_BSD\_SOURCE || \_SVID\_SOURCE

## DESCRIPTION

These functions calculate the inverse hyperbolic cosine of x; that is the value whose hyperbolic cosine is x.

## RETURN VALUE

On success, these functions return the inverse hyperbolic cosine of x.

If x is a NaN, a NaN is returned.

If x is +1, +0 is returned.

If x is positive infinity, positive infinity is returned.

If x is less than 1, a domain error occurs, and the functions return a NaN.

## 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:

Domain error: x is less than 1

errno is set to EDOM. An invalid floating-point exception (FE\_INVALID) is raised.

## ATTRIBUTES

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

??

?Interface            ? Attribute   ? Value ?

??

?acosh(), acoshf(), acoshl() ? 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

`asinh(3)`, `atanh(3)`, `cacosh(3)`, `cosh(3)`, `sinh(3)`, `tanh(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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