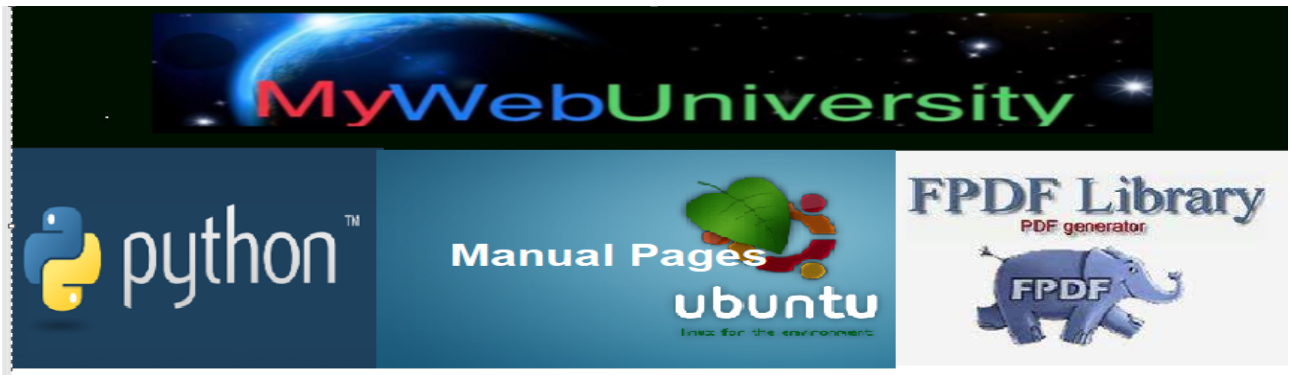

Full credit is given to the above companies including the OS that this PDF file was generated!

Linux Ubuntu 26.04 Manual Pages on command 'coshl.3'

$ man coshl.3

cosh(3) Library Functions Manual cosh(3)

NAME

cosh, coshf, coshl - hyperbolic cosine function

LIBRARY

Math library (libm, -lm)

SYNOPSIS

```
#include <math.h>

double cosh(double x);

float coshf(float x);

long double coshl(long double x);
```

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

coshf(), coshl():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
    || /* Since glibc 2.19: */ _DEFAULT_SOURCE
    || /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

DESCRIPTION

These functions return the hyperbolic cosine of x, which is defined mathematically as:

```
cosh(x) = (exp(x) + exp(-x)) / 2
```

RETURN VALUE

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

If x is a NaN, a NaN is returned.

If x is +0 or -0, 1 is returned.

If x is positive infinity or negative infinity, positive infinity is returned.

If the result overflows, a range error occurs, and the functions return +HUGE_VAL, +HUGE_VALF, or +HUGE_VALL, respectively.

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 overflow

errno is set to ERANGE. An overflow floating-point exception (FE_OVERFLOW) is raised.

ATTRIBUTES

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

Interface	Attribute	Value
cosh(), coshf(), coshl()	Thread safety	MT-Safe

STANDARDS

C11, POSIX.1-2008.

HISTORY

C99, POSIX.1-2001.

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

BUGS

In glibc 2.3.4 and earlier, an overflow floating-point (FE_OVERFLOW) exception is not raised when an overflow occurs.

SEE ALSO

acosh(3), asinh(3), atanh(3), ccos(3), sinh(3), tanh(3)