

**NAME**

ccosh, ccoshf, ccoshl – complex hyperbolic cosine

**SYNOPSIS**

**#include <complex.h>**

**double complex ccosh(double complex z);**

**float complex ccoshf(float complex z);**

**long double complex ccoshl(long double complex z);**

Link with *-lm*.

**DESCRIPTION**

These functions calculate the complex hyperbolic cosine of *z*.

The complex hyperbolic cosine function is defined as:

$$\text{ccosh}(z) = (\exp(z) + \exp(-z)) / 2$$

**VERSIONS**

These functions first appeared in glibc in version 2.1.

**CONFORMING TO**

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

**SEE ALSO**

**cabs(3)**, **cacosh(3)**, **csinh(3)**, **ctanh(3)**, **complex(7)**

**COLOPHON**

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