

**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**

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.

**SEE ALSO**

[cabs\(3\)](#), [cacosh\(3\)](#), [csinh\(3\)](#), [ctanh\(3\)](#), [complex\(7\)](#)

**COLOPHON**

This page is part of release 3.74 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 <http://www.kernel.org/doc/man-pages/>.