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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'cacoshl.3' command

$ man cacoshl.3

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

NAME

cacosh, cacoshf, cacoshl - complex arc hyperbolic cosine

SYNOPSIS

#include <complex.h>

double complex cacosh(double complex z);

float complex cacoshf(float complex z);

long double complex cacoshl(long double complex z);

Link with -lm.

DESCRIPTION

These functions calculate the complex arc hyperbolic cosine of z. If

y = cacosh(z), then z = ccosh(y). The imaginary part of y is chosen in

the interval [-pi,pi]. The real part of y is chosen nonnegative.

One has:

cacosh(z) = 2 * clog(csqrt((z + 1) / 2) + csqrt((z - 1) / 2))

VERSIONS

These functions first appeared in glibc in version 2.1.

ATTRIBUTES

For an explanation of the terms used in this section, see at?

tributes(7).

??

?Interface ? Attribute ? Value ?

??

?cacosh(), cacoshf(), cacoshl() ? Thread safety ? MT-Safe ?

??

CONFORMING TO

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

EXAMPLES

```
/* Link with "-lm" */

#include <complex.h>
#include <stdlib.h>
#include <unistd.h>
#include <stdio.h>

int
main(int argc, char *argv[])
{
    double complex z, c, f;
    if (argc != 3) {
        fprintf(stderr, "Usage: %s <real> <imag>\n", argv[0]);
        exit(EXIT_FAILURE);
    }
    z = atof(argv[1]) + atof(argv[2]) * I;
    c = cacosh(z);
    printf("cacosh() = %6.3f %6.3f*i\n", creal(c), cimag(c));
    f = 2 * clog(csqrt((z + 1)/2) + csqrt((z - 1)/2));
    printf("formula  = %6.3f %6.3f*i\n", creal(f2), cimag(f2));
    exit(EXIT_SUCCESS);
}
```

SEE ALSO

acosh(3), cabs(3), ccosh(3), cimag(3), complex(7)

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/.