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

\$ man cacosl.3

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

NAME

cacos, cacosf, cacosl - complex arc cosine

SYNOPSIS

```
#include <complex.h>

double complex cacos(double complex z);
float complex cacosf(float complex z);
long double complex cacosl(long double complex z);

Link with -lm.
```

DESCRIPTION

These functions calculate the complex arc cosine of z. If $y = \arccos(z)$, then $z = \cos(y)$. The real part of y is chosen in the interval $[0, \pi]$.

One has:

$$\arccos(z) = -i \cdot \log(z + i \cdot \sqrt{1 - z^2})$$

VERSIONS

These functions first appeared in glibc in version 2.1.

ATTRIBUTES

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

??

?Interface ? Attribute ? Value ?

??

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

SEE ALSO

ccos(3), clog(3), complex(7)

COLOPHON

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