



## Rocky Enterprise Linux 9.2 Manual Pages on command 'cacos.3'

C:~>man cacos.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  $y = \text{cacos}(z)$ , then  $z = \text{ccos}(y)$ . The real part of  $y$  is chosen in the interval  $[0, \pi]$ .

One has:

$$\text{cacos}(z) = -i * \text{clog}(z + i * \text{csqrt}(1 - z * z))$$

### VERSIONS

These functions first appeared in glibc in version 2.1.

### ATTRIBUTES

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

??

?Interface           ? Attribute   ? Value   ?

??

?cacos(), cacosf(), cacosl() ? Thread safety ? MT-Safe ?

??

## CONFORMING TO

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

## EXAMPLE

```
/* 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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