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

The **cacos**() function calculates the complex arc cosine of *z*. If*y* = *c acos(z)*, then *z* = *ccos(y)*. The real part of *y* is chosen in the interval [0,pi].

One has:

cacos(z) = -i * clog(z + i * csqrt(1 - z * z))

VERSIONS

These functions first appeared in glibc in version 2.1.

CONFORMING TO

C99.

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*in, creal(c), cimag(c));

f = -i * clog(z + i * csqrt(1 - z * z));

printf(formula = %6.3f %6.3f*in, creal(f), cimag(f));

exit(EXIT_SUCCESS);
}
```

SEE ALSO

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

COLOPHON

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