

NAME

clog, clogf, clogl – natural logarithm of a complex number

LIBRARY

Math library (*libm*, *-lm*)

SYNOPSIS

```
#include <complex.h>
```

```
double complex clog(double complex z);
```

```
float complex clogf(float complex z);
```

```
long double complex clogl(long double complex z);
```

DESCRIPTION

These functions calculate the complex natural logarithm of *z*, with a branch cut along the negative real axis.

The logarithm **clog()** is the inverse function of the exponential **cexp(3)**. Thus, if $y = \text{clog}(z)$, then $z = \text{cexp}(y)$. The imaginary part of *y* is chosen in the interval $[-\pi, \pi]$.

One has:

$$\text{clog}(z) = \log(\text{cabs}(z)) + I * \text{carg}(z)$$

Note that *z* close to zero will cause an overflow.

ATTRIBUTES

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

Interface	Attribute	Value
clog() , clogf() , clogl()	Thread safety	MT-Safe

STANDARDS

C11, POSIX.1-2008.

HISTORY

glibc 2.1. C99, POSIX.1-2001.

SEE ALSO

cabs(3), **cexp(3)**, **clog10(3)**, **clog2(3)**, **complex(7)**