



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

**C:~>man carg.3**

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

### NAME

carg, cargf, cargl - calculate the complex argument

### SYNOPSIS

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

```
double carg(double complex z);
```

```
float cargf(float complex z);
```

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

Link with -lm.

### DESCRIPTION

These functions calculate the complex argument (also called phase angle) of  $z$ , with a branch cut along the negative real axis.

A complex number can be described by two real coordinates. One may use rectangular coordinates and gets

$$z = x + I * y$$

where  $x = \text{creal}(z)$  and  $y = \text{cimag}(z)$ .

Or one may use polar coordinates and gets

$$z = r * \text{cexp}(I * a)$$

where  $r = \text{cabs}(z)$  is the "radius", the "modulus", the absolute value of  $z$ , and

$a = \text{carg}(z)$  is the "phase angle", the argument of  $z$ .

One has:

$$\tan(\text{carg}(z)) = \text{cimag}(z) / \text{creal}(z)$$

RETURN VALUE

The return value is the range of [-pi,pi].

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).

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?Interface            ? Attribute   ? Value   ?

??

?carg(), cargf(), cargl() ? Thread safety ? MT-Safe ?

??

CONFORMING TO

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

SEE ALSO

cabs(3), complex(7)

COLOPHON

This page is part of release 5.05 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/>.

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