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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'atan2f.3' command**

**\$ man atan2f.3**

ATAN2(3)                   Linux Programmer's Manual                   ATAN2(3)

### NAME

atan2, atan2f, atan2l - arc tangent function of two variables

### SYNOPSIS

```
#include <math.h>
```

```
double atan2(double y, double x);
```

```
float atan2f(float y, float x);
```

```
long double atan2l(long double y, long double x);
```

Link with -lm.

Feature Test Macro Requirements for glibc (see feature\_test\_macros(7)):

atan2f(), atan2l():

```
_ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
```

```
|| /* Since glibc 2.19: */ _DEFAULT_SOURCE
```

```
|| /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

### DESCRIPTION

These functions calculate the principal value of the arc tangent of  $y/x$ , using the signs of the two arguments to determine the quadrant of the result.

### RETURN VALUE

On success, these functions return the principal value of the arc tangent of  $y/x$  in radians; the return value is in the range  $[-\pi, \pi]$ .

If  $y$  is  $+0$  ( $-0$ ) and  $x$  is less than 0,  $+\pi$  ( $-\pi$ ) is returned.

If  $y$  is  $+0$  ( $-0$ ) and  $x$  is greater than 0,  $+0$  ( $-0$ ) is returned.

If y is less than 0 and x is +0 or -0, -pi/2 is returned.  
If y is greater than 0 and x is +0 or -0, pi/2 is returned.  
If either x or y is NaN, a NaN is returned.  
If y is +0 (-0) and x is -0, +pi (-pi) is returned.  
If y is +0 (-0) and x is +0, +0 (-0) is returned.  
If y is a finite value greater (less) than 0, and x is negative infinity, +pi (-pi) is returned.  
If y is a finite value greater (less) than 0, and x is positive infinity, +0 (-0) is returned.  
If y is positive infinity (negative infinity), and x is finite, pi/2 (-pi/2) is returned.  
If y is positive infinity (negative infinity) and x is negative infinity, +3\*pi/4 (-3\*pi/4) is returned.  
If y is positive infinity (negative infinity) and x is positive infinity, +pi/4 (-pi/4) is returned.

## ERRORS

No errors occur.

## ATTRIBUTES

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

attributes(7).

??

?Interface                   ? Attribute   ? Value   ?

??

?atan2(), atan2f(), atan2l() ? Thread safety ? MT-Safe ?

??

## CONFORMING TO

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

The variant returning double also conforms to SVr4, 4.3BSD, C89.

## SEE ALSO

acos(3), asin(3), atan(3), carg(3), cos(3), sin(3), tan(3)

## COLOPHON

This page is part of release 5.10 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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