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Rocky Enterprise Linux 9.2 Manual Pages on command 'atan2.3'

\$ man atan2.3

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).

??

?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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