NAME

tan, tanf, tanl − tangent function

LIBRARY

Math library (*libm*, *−lm*)

SYNOPSIS

#include <math.h>

double tan(double *x***);**
float tanf(float *x***);**
long double tanl(long double *x***);**

Feature Test Macro Requirements for glibc (see **feature_test_macros**(7)):

tanf(), **tanl**():
```
    _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
        || /* Since glibc 2.19: */ _DEFAULT_SOURCE
        || /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

DESCRIPTION

These functions return the tangent of *x*, where *x* is given in radians.

RETURN VALUE

On success, these functions return the tangent of *x*.

If *x* is a NaN, a NaN is returned.

If *x* is positive infinity or negative infinity, a domain error occurs, and a NaN is returned.

If the correct result would overflow, a range error occurs, and the functions return **HUGE_VAL**, **HUGE_VALF**, or **HUGE_VALL**, respectively, with the mathematically correct sign.

ERRORS

See **math_error**(7) for information on how to determine whether an error has occurred when calling these functions.

The following errors can occur:

Domain error: *x* is an infinity

errno is set to **EDOM** (but see BUGS). An invalid floating-point exception (**FE_INVALID**) is raised.

Range error: result overflow

An overflow floating-point exception (**FE_OVERFLOW**) is raised.

ATTRIBUTES

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

Interface	**Attribute**	**Value**
tan(), **tanf**(), **tanl**()	Thread safety	MT-Safe

STANDARDS

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

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

BUGS

Before glibc 2.10, the glibc implementation did not set *errno* to **EDOM** when a domain error occurred.

SEE ALSO

acos(3), **asin**(3), **atan**(3), **atan2**(3), **cos**(3), **ctan**(3), **sin**(3)