



Linux Ubuntu 26.04 Manual Pages on command 'tanh.3'

\$ man tanh.3

tanh(3) Library Functions Manual tanh(3)

NAME

tanh, tanhf, tanhl - hyperbolic tangent function

LIBRARY

Math library (libm, -lm)

SYNOPSIS

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

```
double tanh(double x);
```

```
float tanhf(float x);
```

```
long double tanhl(long double x);
```

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

tanhf(), tanhl():

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

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

```
|| /* glibc <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

DESCRIPTION

These functions return the hyperbolic tangent of x, which is defined mathematically as:

$$\tanh(x) = \sinh(x) / \cosh(x)$$

RETURN VALUE

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

If x is a NaN, a NaN is returned.

If x is +0 (-0), +0 (-0) is returned.

If x is positive infinity (negative infinity), +1 (-1) is returned.

ERRORS

No errors occur.

ATTRIBUTES

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

[illegible]

?	Interface	?	Attribute	?	Value	?
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[illegible]

? tanh(), tanhf(), tanhl() ? Thread safety ? MT-Safe ?

[illegible]

STANDARDS

C11, POSIX.1-2008.

HISTORY

C99, POSIX.1-2001.

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

SEE ALSO

acosh(3), asinh(3), atanh(3), cosh(3), ctanh(3), sinh(3)

Linux man-pages 6.17

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 $\tanh(3)$