



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

\$ man gammal.3

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

NAME

gamma, gammaf, gammal - (logarithm of the) gamma function

SYNOPSIS

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

```
double gamma(double x);
```

```
float gammaf(float x);
```

```
long double gammal(long double x);
```

Link with -lm.

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

gamma():

```
_XOPEN_SOURCE
```

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

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

gammaf(), gammal():

```
_XOPEN_SOURCE >= 600 || (_XOPEN_SOURCE && _ISOC99_SOURCE)
```

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

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

DESCRIPTION

These functions are deprecated: instead, use either the `tgamma(3)` or the `lgamma(3)` functions, as appropriate.

For the definition of the Gamma function, see `tgamma(3)`.

*BSD version

The libm in 4.4BSD and some versions of FreeBSD had a `gamma()` function that computes the Gamma function, as one would expect.

glibc version

Glibc has a `gamma()` function that is equivalent to `lgamma(3)` and computes the natural logarithm of the Gamma function.

RETURN VALUE

See `lgamma(3)`.

ERRORS

See `lgamma(3)`.

ATTRIBUTES

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

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?Interface ? Attribute ? Value ?

??

?`gamma()`, `gammalf()`, `gammal()` ? Thread safety ? MT-Unsafe race: `signgam` ?

??

CONFORMING TO

Because of historical variations in behavior across systems, this function is not specified in any recent standard. It was documented in SVID 2.

NOTES

History

4.2BSD had a `gamma()` that computed $\ln(|\Gamma(|x|)|)$, leaving the sign of $\Gamma(|x|)$ in the external integer `signgam`. In 4.3BSD the name was changed to `lgamma(3)`, and the man page promises

"At some time in the future the name `gamma` will be rehabilitated and used for the Gamma function"

This did indeed happen in 4.4BSD, where `gamma()` computes the Gamma function (with no effect on `signgam`). However, this came too late, and we now have `tgamma(3)`, the "true gamma" function.

SEE ALSO

`lgamma(3)`, `signgam(3)`, `tgamma(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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