

NAME

usleep – suspend execution for microsecond intervals

SYNOPSIS

```
#include <unistd.h>
```

```
int usleep(useconds_t usec);
```

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

usleep():

Since glibc 2.12:

```
(_XOPEN_SOURCE >= 500) && ! (_POSIX_C_SOURCE >= 200809L)
```

```
    /* Glibc since 2.19: */ _DEFAULT_SOURCE
```

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

Before glibc 2.12:

```
_BSD_SOURCE || _XOPEN_SOURCE >= 500
```

DESCRIPTION

The **usleep()** function suspends execution of the calling thread for (at least) *usec* microseconds. The sleep may be lengthened slightly by any system activity or by the time spent processing the call or by the granularity of system timers.

RETURN VALUE

The **usleep()** function returns 0 on success. On error, -1 is returned, with *errno* set to indicate the cause of the error.

ERRORS**EINTR**

Interrupted by a signal; see **signal(7)**.

EINVAL

usec is greater than or equal to 1000000. (On systems where that is considered an error.)

ATTRIBUTES

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

Interface	Attribute	Value
usleep()	Thread safety	MT-Safe

CONFORMING TO

4.3BSD, POSIX.1-2001. POSIX.1-2001 declares this function obsolete; use **nanosleep(2)** instead. POSIX.1-2008 removes the specification of **usleep()**.

On the original BSD implementation, and in glibc before version 2.2.2, the return type of this function is *void*. The POSIX version returns *int*, and this is also the prototype used since glibc 2.2.2.

Only the **EINVAL** error return is documented by SUSv2 and POSIX.1-2001.

NOTES

The type *useconds_t* is an unsigned integer type capable of holding integers in the range [0,1000000]. Programs will be more portable if they never mention this type explicitly. Use

```
#include <unistd.h>
...
    unsigned int usecs;
...
    usleep(usecs);
```

The interaction of this function with the **SIGALRM** signal, and with other timer functions such as **alarm(2)**, **sleep(3)**, **nanosleep(2)**, **setitimer(2)**, **timer_create(2)**, **timer_delete(2)**, **timer_getoverrun(2)**, **timer_gettime(2)**, **timer_settime(2)**, **ualarm(3)** is unspecified.

SEE ALSO

alarm(2), getitimer(2), nanosleep(2), select(2), setitimer(2), sleep(3), ualarm(3), time(7)

COLOPHON

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