

**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 not smaller than 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
<b>usleep()</b>	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**

This page is part of release 4.10 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/>.