



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

\$ man pthread_attr_setscope.3

pthread_attr_setscope(3) Library Functions Manual pthread_attr_setscope(3)

NAME

pthread_attr_setscope, pthread_attr_getscope - set/get contention scope attribute in thread attributes object

LIBRARY

POSIX threads library (libpthread, -lpthread)

SYNOPSIS

```
#include <pthread.h>

int pthread_attr_setscope(pthread_attr_t *attr, int scope);

int pthread_attr_getscope(const pthread_attr_t *restrict attr,
                           int *restrict scope);
```

DESCRIPTION

The pthread_attr_setscope() function sets the contention scope attribute of the thread attributes object referred to by attr to the value specified in scope. The contention scope attribute defines the set of threads against which a thread competes for resources such as the CPU. POSIX.1 specifies two possible values for scope:

PTHREAD_SCOPE_SYSTEM

The thread competes for resources with all other threads in all processes on the system that are in the same scheduling allocation domain (a group of one or more processes). PTHREAD_SCOPE_SYSTEM threads are scheduled relative to one another according to their scheduling policy and priority.

PTHREAD_SCOPE_PROCESS

The thread competes for resources with all other threads in the same process that

tention scope.

Linux supports PTHREAD_SCOPE_SYSTEM, but not PTHREAD_SCOPE_PROCESS.

tributes object attr to PTHREAD_EXPLICIT_SCHED.

attributes object referred to by attr in the buffer pointed to by scope.

RETURN VALUE

On success, these functions return 0; on error, they return a nonzero error number.

ERRORS

pthread_attr_setscope() can fail with the following errors:

EINVAL An invalid value was specified in scope.

ENOTSUP

scope specified the value `PTHREAD_SCOPE_PROCESS`, which is not supported on Linux.

ATTRIBUTES

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

[illegible]

Interface	Attribute	Value
?	?	?

[illegible]

? pthread_attr_setscope(), pthread_attr_getscope() ? Thread safety ? MT-Safe ?

[illegible]

STANDARDS

POSIX.1-2008.

HISTORY

POSIX.1-2001.

NOTES

The PTHREAD_SCOPE_SYSTEM contention scope typically indicates that a user-space thread is bound directly to a single kernel-scheduling entity. This is the case on Linux for the obsolete LinuxThreads implementation and the modern NPTL implementation, which are both 1:1 threading implementations.

POSIX.1 specifies that the default contention scope is implementation-defined.

SEE ALSO

pthread_attr_init(3), pthread_attr_setaffinity_np(3), pthread_attr_setinheritsched(3), pthread_attr_setschedparam(3), pthread_attr_setschedpolicy(3), pthread_create(3), pthreads(7)

Linux man-pages 6.17

2025-05-17

pthread_attr_setscope(3)