



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

\$ man pthread_rwlockattr_getkind_np.3

pthread_rwlockattr_setkind_np(3) Library Functions Manual pthread_rwlockattr_setkind_np(3)

NAME

pthread_rwlockattr_setkind_np, pthread_rwlockattr_getkind_np - set/get the read-write lock
kind of the thread read-write lock attribute object

LIBRARY

POSIX threads library (libpthread, -lpthread)

SYNOPSIS

```
#include <pthread.h>

int pthread_rwlockattr_setkind_np(pthread_rwlockattr_t *attr,
                                int pref);

int pthread_rwlockattr_getkind_np(
    const pthread_rwlockattr_t *restrict attr,
    int *restrict pref);
```

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

```
pthread_rwlockattr_setkind_np(), pthread_rwlockattr_getkind_np():
    _XOPEN_SOURCE >= 500 || _POSIX_C_SOURCE >= 200809L
```

DESCRIPTION

The pthread_rwlockattr_setkind_np() function sets the "lock kind" attribute of the read-write lock attribute object referred to by attr to the value specified in pref. The argument pref may be set to one of the following:

PTHREAD_RWLOCK_PREFER_READER_NP

This is the default. A thread may hold multiple read locks; that is, read locks are recursive. According to The Single Unix Specification, the behavior is unspecified

when a reader tries to place a lock, and there is no write lock but writers are wait?

ing. Giving preference to the reader, as is set by `PTHREAD_RWLOCK_PREFER_READER_NP`, implies that the reader will receive the requested lock, even if a writer is waiting.

As long as there are readers, the writer will be starved.

`PTHREAD_RWLOCK_PREFER_WRITER_NP`

This is intended as the write lock analog of `PTHREAD_RWLOCK_PREFER_READER_NP`. This is ignored by glibc because the POSIX requirement to support recursive read locks would cause this option to create trivial deadlocks; instead use `PTHREAD_RWLOCK_PREFER_WRITER_NONRECURSIVE_NP` which ensures the application developer will not take recursive read locks thus avoiding deadlocks.

`PTHREAD_RWLOCK_PREFER_WRITER_NONRECURSIVE_NP`

Setting the lock kind to this avoids writer starvation as long as any read locking is not done in a recursive fashion.

The `pthread_rwlockattr_getkind_np()` function returns the value of the lock kind attribute of the read-write lock attribute object referred to by `attr` in the pointer `pref`.

RETURN VALUE

On success, these functions return 0. Given valid pointer arguments, `pthread_rwlockattr_getkind_np()` always succeeds. On error, `pthread_rwlockattr_setkind_np()` returns a nonzero error number.

ERRORS

`EINVAL` `pref` specifies an unsupported value.

STANDARDS

GNU; hence the suffix "`_np`" (nonportable) in the names.

HISTORY

glibc 2.1.

SEE ALSO

`pthreads(7)`