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

$ man pthread_rwlockattr_setkind_np.3

PTHREAD_RWLOCKATTR_SETKIND_Library Functions MPTHREAD_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

SYNOPSIS

```
#include <pthread.h>
int pthread_rwlockattr_setkind_np(pthread_rwlockattr_t *attr,
                                  int pref);
int pthread_rwlockattr_getkind_np(const pthread_rwlockattr_t *attr,
                                  int *pref);
```

Compile and link with -pthread.

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" at? tribute 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 waiting. 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_PRE? FER_READER_NP. This is ignored by glibc because the POSIX re? quirement to support recursive read locks would cause this op? tion 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.

VERSIONS

The pthread_rwlockattr_getkind_np() and pthread_rwlockattr_setkind_np() functions first appeared in glibc 2.1.

CONFORMING TO

These functions are non-standard GNU extensions; hence the suffix "_np" (nonportable) in the names.

SEE ALSO

pthreads(7)

COLOPHON

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