

NAME

pthread_attr_setsigmask_np, pthread_attr_getsigmask_np – set/get signal mask attribute in thread attributes object

LIBRARY

POSIX threads library (*libpthread*, *-lpthread*)

SYNOPSIS

```
#define _GNU_SOURCE          /* See feature_test_macros(7) */
#include <pthread.h>

int pthread_attr_setsigmask_np(pthread_attr_t *attr,
                               const sigset_t *sigmask);
int pthread_attr_getsigmask_np(const pthread_attr_t *attr,
                               sigset_t *sigmask);
```

DESCRIPTION

The **pthread_attr_setsigmask_np()** function sets the signal mask attribute of the thread attributes object referred to by *attr* to the value specified in *sigmask*. If *sigmask* is specified as NULL, then any existing signal mask attribute in *attr* is unset.

The **pthread_attr_getsigmask_np()** function returns the signal mask attribute of the thread attributes object referred to by *attr* in the buffer pointed to by *sigmask*. If the signal mask attribute is currently unset, then this function returns the special value **PTHREAD_ATTR_NO_SIGMASK_NP** as its result.

RETURN VALUE

The **pthread_attr_setsigmask_np()** function returns 0 on success, or a nonzero error number on failure.

the **pthread_attr_getsigmask_np()** function returns either 0 or **PTHREAD_ATTR_NO_SIGMASK_NP**. When 0 is returned, the signal mask attribute is returned via *sigmask*. A return value of **PTHREAD_ATTR_NO_SIGMASK_NP** indicates that the signal mask attribute is not set in *attr*.

On error, these functions return a positive error number.

ERRORS**ENOMEM**

(**pthread_attr_setsigmask_np()**) Could not allocate memory.

VERSIONS

These functions are provided since glibc 2.32.

ATTRIBUTES

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

Interface	Attribute	Value
pthread_attr_setsigmask_np() , pthread_attr_getsigmask_np()	Thread safety	MT-Safe

STANDARDS

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

NOTES

The signal mask attribute determines the signal mask that will be assigned to a thread created using the thread attributes object *attr*. If this attribute is not set, then a thread created using *attr* will inherit a copy of the creating thread's signal mask.

For more details on signal masks, see **sigprocmask(2)**. For a description of a set of macros that can be used to manipulate and inspect signal sets, see **sigsetops(3)**.

In the absence of **pthread_attr_setsigmask_np()** it is possible to create a thread with a desired signal mask as follows:

- The creating thread uses **pthread_sigmask(3)** to save its current signal mask and set its mask to block all signals.

- The new thread is then created using **pthread_create()**; the new thread will inherit the creating thread's signal mask.
- The new thread sets its signal mask to the desired value using **pthread_sigmask(3)**.
- The creating thread restores its signal mask to the original value.

Following the above steps, there is no possibility for the new thread to receive a signal before it has adjusted its signal mask to the desired value.

SEE ALSO

sigprocmask(2), pthread_attr_init(3), pthread_sigmask(3), pthreads(7), signal(7)