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***Rocky Enterprise Linux 9.2 Manual Pages on command 'pthread\_sigmask.3'***

***\$ man pthread\_sigmask.3***

PTHREAD\_SIGMASK(3)                      Linux Programmer's Manual                      PTHREAD\_SIGMASK(3)

NAME

pthread\_sigmask - examine and change mask of blocked signals

SYNOPSIS

```
#include <signal.h>

int pthread_sigmask(int how, const sigset_t *set, sigset_t *oldset);

Compile and link with -pthread.
```

Feature Test Macro Requirements for glibc (see feature\_test\_macros(7)):

```
pthread_sigmask():

    _POSIX_C_SOURCE >= 199506L || _XOPEN_SOURCE >= 500
```

DESCRIPTION

The pthread\_sigmask() function is just like sigprocmask(2), with the difference that its use in multithreaded programs is explicitly specified by POSIX.1. Other differences are noted in this page.

For a description of the arguments and operation of this function, see sigprocmask(2).

RETURN VALUE

On success, pthread\_sigmask() returns 0; on error, it returns an error number.

ERRORS

See sigprocmask(2).

ATTRIBUTES

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

??

?Interface    ? Attribute    ? Value    ?

??

?pthread\_sigmask() ? Thread safety ? MT-Safe ?

??

CONFORMING TO

POSIX.1-2001, POSIX.1-2008.

NOTES

A new thread inherits a copy of its creator's signal mask.

The glibc pthread\_sigmask() function silently ignores attempts to block the two real-time signals that are used internally by the NPTL threading implementation. See nptl(7) for details.

EXAMPLES

The program below blocks some signals in the main thread, and then creates a dedicated thread to fetch those signals via sigwait(3). The following shell session demonstrates its use:

```
$ ./a.out &
[1] 5423
$ kill -QUIT %1
Signal handling thread got signal 3
$ kill -USR1 %1
Signal handling thread got signal 10
$ kill -TERM %1
[1]+  Terminated      ./a.out
```

Program source

```
#include <pthread.h>
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <signal.h>
#include <errno.h>

/* Simple error handling functions */
#define handle_error_en(en, msg) \
    do { errno = en; perror(msg); exit(EXIT_FAILURE); } while (0)

static void *
```

```

sig_thread(void *arg)
{
    sigset_t *set = arg;
    int s, sig;
    for (;;) {
        s = sigwait(set, &sig);
        if (s != 0)
            handle_error_en(s, "sigwait");
        printf("Signal handling thread got signal %d\n", sig);
    }
}

int
main(int argc, char *argv[])
{
    pthread_t thread;
    sigset_t set;
    int s;
    /* Block SIGQUIT and SIGUSR1; other threads created by main()
       will inherit a copy of the signal mask. */
    sigemptyset(&set);
    sigaddset(&set, SIGQUIT);
    sigaddset(&set, SIGUSR1);
    s = pthread_sigmask(SIG_BLOCK, &set, NULL);
    if (s != 0)
        handle_error_en(s, "pthread_sigmask");
    s = pthread_create(&thread, NULL, &sig_thread, &set);
    if (s != 0)
        handle_error_en(s, "pthread_create");
    /* Main thread carries on to create other threads and/or do
       other work */
    pause();      /* Dummy pause so we can test program */
}

```

sigaction(2), sigpending(2), sigprocmask(2), pthread\_attr\_setsigmask\_np(3), pthread\_create(3), pthread\_kill(3), sigsetops(3), pthreads(7), signal(7)

## COLOPHON

This page is part of release 5.10 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/>.

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PTHREAD\_SIGMASK(3)