

NAME

pthread_create - create a new thread

LIBRARY

POSIX Threads Library (libpthread, -lpthread)

SYNOPSIS

```
#include <pthread.h>
```

int

```
pthread_create(pthread_t *restrict thread, const pthread_attr_t *restrict attr,  
void *(*start_routine)(void *), void *restrict arg);
```

DESCRIPTION

The **pthread_create**() function is used to create a new thread, with attributes specified by *attr*, within a process. If *attr* is NULL, the default attributes are used. If the attributes specified by *attr* are modified later, the thread's attributes are not affected. Upon successful completion **pthread_create**() will store the ID of the created thread in the location specified by *thread*.

The thread is created executing *start_routine* with *arg* as its sole argument. If the *start_routine* returns, the effect is as if there was an implicit call to **pthread_exit**() using the return value of *start_routine* as the exit status. Note that the thread in which **main**() was originally invoked differs from this. When it returns from **main**(), the effect is as if there was an implicit call to **exit**() using the return value of **main**() as the exit status.

The signal state of the new thread is initialized as:

- The signal mask is inherited from the creating thread.
- The set of signals pending for the new thread is empty.

RETURN VALUES

If successful, the **pthread_create**() function will return zero. Otherwise an error number will be returned to indicate the error.

ERRORS

The **pthread_create**() function can return any of the following errors:

[ENOMEM] The system lacked the necessary resources to create another thread.

- [EAGAIN] The system-imposed limit on the total number of threads in a process [PTHREAD_THREADS_MAX] would be exceeded.
- [EAGAIN] The RACCT_NTHR limit would be exceeded; see racct(2).
- [EPERM] The caller does not have permission to set the scheduling parameters or scheduling policy.
- [EINVAL] A value specified by *attr* is invalid.
- [EDEADLK] The CPU set specified by *attr* would prevent the thread from running on any CPU.
- [EFAULT] The stack base specified by *attr* is invalid, or the kernel was unable to put required initial data on the stack.

SEE ALSO

cpuset_setaffinity(2), fork(2), racct(2), thr_new(2), pthread_attr(3), pthread_cancel(3), pthread_cleanup_pop(3), pthread_cleanup_push(3), pthread_exit(3), pthread_join(3)

STANDARDS

The **pthread_create()** function conforms to ISO/IEC 9945-1:1996 ("POSIX.1").