

NAME

pthread_tryjoin_np, pthread_timedjoin_np – try to join with a terminated thread

LIBRARY

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

SYNOPSIS

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

int pthread_tryjoin_np(pthread_t thread, void **retval);
int pthread_timedjoin_np(pthread_t thread, void **retval,
                        const struct timespec *abstime);
```

DESCRIPTION

These functions operate in the same way as **pthread_join(3)**, except for the differences described on this page.

The **pthread_tryjoin_np()** function performs a nonblocking join with the thread *thread*, returning the exit status of the thread in **retval*. If *thread* has not yet terminated, then instead of blocking, as is done by **pthread_join(3)**, the call returns an error.

The **pthread_timedjoin_np()** function performs a join-with-timeout. If *thread* has not yet terminated, then the call blocks until a maximum time, specified in *abstime*, measured against the **CLOCK_REALTIME** clock. If the timeout expires before *thread* terminates, the call returns an error. The *abstime* argument is a **timespec(3)** structure, specifying an absolute time measured since the Epoch (see **time(2)**).

RETURN VALUE

On success, these functions return 0; on error, they return an error number.

ERRORS

These functions can fail with the same errors as **pthread_join(3)**. **pthread_tryjoin_np()** can in addition fail with the following error:

EBUSY

thread had not yet terminated at the time of the call.

pthread_timedjoin_np() can in addition fail with the following errors:

EINVAL

abstime value is invalid (*tv_sec* is less than 0 or *tv_nsec* is greater than 1e9).

ETIMEDOUT

The call timed out before *thread* terminated.

pthread_timedjoin_np() never returns the error **EINTR**.

VERSIONS

These functions were added in glibc 2.3.3.

ATTRIBUTES

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

Interface	Attribute	Value
pthread_tryjoin_np() , pthread_timedjoin_np()	Thread safety	MT-Safe

STANDARDS

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

BUGS

The **pthread_timedjoin_np()** function measures time by internally calculating a relative sleep interval that is then measured against the **CLOCK_MONOTONIC** clock instead of the **CLOCK_REALTIME** clock. Consequently, the timeout is unaffected by discontinuous changes to the **CLOCK_REALTIME** clock.

EXAMPLES

The following code waits to join for up to 5 seconds:

```
struct timespec ts;
int s;

...

if (clock_gettime(CLOCK_REALTIME, &ts) == -1) {
    /* Handle error */
}

ts.tv_sec += 5;

s = pthread_timedjoin_np(thread, NULL, &ts);
if (s != 0) {
    /* Handle error */
}
```

SEE ALSO

clock_gettime(2), pthread_exit(3), pthread_join(3), timespec(3), pthreads(7)