

NAME

pthread_tryjoin_np, pthread_timedjoin_np – try to join with a terminated thread

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);
```

Compile and link with `-pthread`.

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`. If the timeout expires before `thread` terminates, the call returns an error. The `abstime` argument is a structure of the following form, specifying an absolute time measured since the Epoch (see [time\(2\)](#)):

```
struct timespec {
    time_t tv_sec;      /* seconds */
    long tv_nsec;      /* nanoseconds */
};
```

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:

ETIMEDOUT

The call timed out before `thread` terminated.

EINVAL

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

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

VERSIONS

These functions first appeared in glibc in version 2.3.3.

ATTRIBUTES

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

| Interface | Attribute | Value |
|--|---------------|---------|
| <code>pthread_tryjoin_np()</code> , <code>pthread_timedjoin_np()</code> | Thread safety | MT-Safe |

CONFORMING TO

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

EXAMPLE

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\(3\)](#), [pthreads\(7\)](#)

COLOPHON

This page is part of release 4.16 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/>.