NAME

tkill, tgkill − send a signal to a thread

LIBRARY

Standard C library (*libc*, *−lc*)

SYNOPSIS

```
#include <signal.h>          /* Definition of SIG* constants */
#include <sys/syscall.h>     /* Definition of SYS_* constants */
#include <unistd.h>

[[deprecated]] int syscall(SYS_tkill, pid_t tid, int sig);

#include <signal.h>

int tgkill(pid_t tgid, pid_t tid, int sig);
```

Note: glibc provides no wrapper for **tkill**(), necessitating the use of **syscall**(2).

DESCRIPTION

tgkill() sends the signal *sig* to the thread with the thread ID *tid* in the thread group *tgid*. (By contrast, **kill**(2) can be used to send a signal only to a process (i.e., thread group) as a whole, and the signal will be delivered to an arbitrary thread within that process.)

tkill() is an obsolete predecessor to **tgkill**(). It allows only the target thread ID to be specified, which may result in the wrong thread being signaled if a thread terminates and its thread ID is recycled. Avoid using this system call.

These are the raw system call interfaces, meant for internal thread library use.

RETURN VALUE

On success, zero is returned. On error, −1 is returned, and *errno* is set to indicate the error.

ERRORS

EAGAIN
: The **RLIMIT_SIGPENDING** resource limit was reached and *sig* is a real-time signal.

EAGAIN
: Insufficient kernel memory was available and *sig* is a real-time signal.

EINVAL
: An invalid thread ID, thread group ID, or signal was specified.

EPERM
: Permission denied. For the required permissions, see **kill**(2).

ESRCH
: No process with the specified thread ID (and thread group ID) exists.

VERSIONS

tkill() is supported since Linux 2.4.19 / 2.5.4. **tgkill**() was added in Linux 2.5.75.

Library support for **tgkill**() was added in glibc 2.30.

STANDARDS

tkill() and **tgkill**() are Linux-specific and should not be used in programs that are intended to be portable.

NOTES

See the description of **CLONE_THREAD** in **clone**(2) for an explanation of thread groups.

Before glibc 2.30, there was also no wrapper function for **tgkill**().

SEE ALSO

clone(2), **gettid**(2), **kill**(2), **rt_sigqueueinfo**(2)