

NAME

flockfile, ftrylockfile, funlockfile - lock FILE for stdio

SYNOPSIS

```
#include <stdio.h>

void flockfile(FILE *filehandle);
int ftrylockfile(FILE *filehandle);
void funlockfile(FILE *filehandle);
```

Feature Test Macro Requirements for glibc (see [feature_test_macros\(7\)](#)):

All functions shown above:

```
_POSIX_C_SOURCE >= 1 || _XOPEN_SOURCE || _BSD_SOURCE || _SVID_SOURCE ||
_POSIX_SOURCE
```

DESCRIPTION

The stdio functions are thread-safe. This is achieved by assigning to each *FILE* object a lockcount and (if the lockcount is nonzero) an owning thread. For each library call, these functions wait until the *FILE* object is no longer locked by a different thread, then lock it, do the requested I/O, and unlock the object again.

(Note: this locking has nothing to do with the file locking done by functions like [flock\(2\)](#) and [lockf\(3\)](#).)

All this is invisible to the C-programmer, but there may be two reasons to wish for more detailed control. On the one hand, maybe a series of I/O actions by one thread belongs together, and should not be interrupted by the I/O of some other thread. On the other hand, maybe the locking overhead should be avoided for greater efficiency.

To this end, a thread can explicitly lock the *FILE* object, then do its series of I/O actions, then unlock. This prevents other threads from coming in between. If the reason for doing this was to achieve greater efficiency, one does the I/O with the nonlocking versions of the stdio functions: with [getc_unlocked\(3\)](#) and [putc_unlocked\(3\)](#) instead of [getc\(3\)](#) and [putc\(3\)](#).

The [flockfile\(\)](#) function waits for **filehandle* to be no longer locked by a different thread, then makes the current thread owner of **filehandle*, and increments the lockcount.

The [funlockfile\(\)](#) function decrements the lock count.

The [ftrylockfile\(\)](#) function is a nonblocking version of [flockfile\(\)](#). It does nothing in case some other thread owns **filehandle*, and it obtains ownership and increments the lockcount otherwise.

RETURN VALUE

The [ftrylockfile\(\)](#) function returns zero for success (the lock was obtained), and nonzero for failure.

ERRORS

None.

ATTRIBUTES

Multithreading (see [pthreads\(7\)](#))

The [flockfile\(\)](#), [ftrylockfile\(\)](#), and [funlockfile\(\)](#) functions are thread-safe.

CONFORMING TO

POSIX.1-2001.

AVAILABILITY

These functions are available when `_POSIX_THREAD_SAFE_FUNCTIONS` is defined.

SEE ALSO

[unlocked_stdio\(3\)](#)

COLOPHON

This page is part of release 3.74 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 <http://www.kernel.org/doc/man-pages/>.