

Interoperation of flock(2), fcntl(2), and lockf(3)

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Hi folks,

I've always been confused by the following sentence from the lockf(3) manpage:

The lockf(), fcntl(2) and flock(2) locks may be safely used concurrently.

Does that mean that each of those calls uses a locking mechanism of its own? Of course, in practice those calls use a mutual mechanism, thus allowing serial access to a file from applications using different calls. However, there's an oddity: While it's possible for a process to obtain the same lock several times w/o error (it's a no-op case of upgrading the lock,) intermixing flock(2) and fcntl(2), or flock(2) and lockf(3), within the same process results in EAGAIN upon the second locking attempt. That's while mixing fcntl(2) and lockf(3) is all right as long as the latter call is just a wrapper for the former one. Of course, intermixing different lock calls within one process is a poor idea at the first place, but I can imagine some mail application that tries to coax all the mailbox locking schemes at once.

Considering all the above, I'd like to add the following paragraph to the flock(2), lockf(3), and fcntl(2) man pages (replacing the sentence quoted from lockf(3)):

The flock(2), fcntl(2), and lockf(3) locks are compatible. Processes using different locking interfaces can cooperate over the same file safely. However, only one of such interfaces should be used within a process. If a file is locked by a process through flock(2), any record within the file will be seen as locked from the viewpoint of another process using fcntl(2) or lockf(3), and vice versa.

Any objections or comments?

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freebsd-hackers: Interoperation of flock(2), fcntl(2), and lockf(3)

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