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Rocky Enterprise Linux 9.2 Manual Pages on command 'forkpty.3'

\$ man forkpty.3

OPENPTY(3) Linux Programmer's Manual OPENPTY(3)

NAME

openpty, login_tty, forkpty - terminal utility functions

SYNOPSIS

```
#include <pty.h>

int openpty(int *amaster, int *aslave, char *name,
            const struct termios *termp,
            const struct winsize *winp);

pid_t forkpty(int *amaster, char *name,
              const struct termios *termp,
              const struct winsize *winp);

#include <utmp.h>

int login_tty(int fd);

Link with -lutil.
```

DESCRIPTION

The `openpty()` function finds an available pseudoterminal and returns file descriptors for the master and slave in `amaster` and `aslave`. If `name` is not `NULL`, the filename of the slave is returned in `name`. If `termp` is not `NULL`, the terminal parameters of the slave will be set to the values in `termp`. If `winp` is not `NULL`, the window size of the slave will be set to the values in `winp`.

The `login_tty()` function prepares for a login on the terminal referred to by the file descriptor `fd` (which may be a real terminal device, or the slave of a pseudoterminal as returned by `openpty()`) by creating a new session, making `fd` the controlling terminal for the

calling process, setting fd to be the standard input, output, and error streams of the current process, and closing fd.

The forkpty() function combines openpty(), fork(2), and login_tty() to create a new process operating in a pseudoterminal. A file descriptor referring to master side of the pseudoterminal is returned in amaster. If name is not NULL, the buffer it points to is used to return the filename of the slave. The termp and winp arguments, if not NULL, will determine the terminal attributes and window size of the slave side of the pseudoterminal.

RETURN VALUE

If a call to openpty(), login_tty(), or forkpty() is not successful, -1 is returned and errno is set to indicate the error. Otherwise, openpty(), login_tty(), and the child process of forkpty() return 0, and the parent process of forkpty() returns the process ID of the child process.

ERRORS

openpty() fails if:

ENOENT There are no available terminals.

login_tty() fails if ioctl(2) fails to set fd to the controlling terminal of the calling process.

forkpty() fails if either openpty() or fork(2) fails.

ATTRIBUTES

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

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?Interface ? Attribute ? Value ?

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?forkpty(), openpty() ? Thread safety ? MT-Safe locale ?

??

?login_tty() ? Thread safety ? MT-Unsafe race:ttyname ?

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CONFORMING TO

These are BSD functions, present in glibc. They are not standardized in POSIX.

NOTES

The const modifiers were added to the structure pointer arguments of openpty() and forkpty() in glibc 2.8.

In versions of glibc before 2.0.92, openpty() returns file descriptors for a BSD pseu?

doterminal pair; since glibc 2.0.92, it first attempts to open a UNIX 98 pseudoterminal pair, and falls back to opening a BSD pseudoterminal pair if that fails.

BUGS

Nobody knows how much space should be reserved for name. So, calling `openpty()` or `forkpty()` with non-NULL name may not be secure.

SEE ALSO

`fork(2)`, `ttyname(3)`, `pty(7)`

COLOPHON

This page is part of release 5.10 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/>.

GNU

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