NAME

ptmx and pts − pseudo-terminal master and slave

DESCRIPTION

The file */dev/ptmx* is a character file with major number 5 and minor number 2, usually of mode 0666 and owner.group of root.root. It is used to create a pseudo-terminal master and slave pair.

When a process opens */dev/ptmx*, it gets a file descriptor for a pseudo-terminal master (PTM), and a pseudo-terminal slave (PTS) device is created in the */dev/pts* directory. Each file descriptor obtained by opening */dev/ptmx* is an independent PTM with its own associated PTS, whose path can be found by passing the descriptor to **ptsname**(3).

Before opening the pseudo-terminal slave, you must pass the master's file descriptor to **grantpt**(3) and **unlockpt**(3).

Once both the pseudo-terminal master and slave are open, the slave provides processes with an interface that is identical to that of a real terminal.

Data written to the slave is presented on the master descriptor as input. Data written to the master is presented to the slave as input.

In practice, pseudo-terminals are used for implementing terminal emulators such as **xterm**(1), in which data read from the pseudo-terminal master is interpreted by the application in the same way a real terminal would interpret the data, and for implementing remote-login programs such as **sshd**(8), in which data read from the pseudo-terminal master is sent across the network to a client program that is connected to a terminal or terminal emulator.

Pseudo-terminals can also be used to send input to programs that normally refuse to read input from pipes (such as **su**(1), and **passwd**(1)).

FILES

/dev/ptmx, */dev/pts/**

NOTES

The Linux support for the above (known as Unix98 pty naming) is done using the *devpts* file system, that should be mounted on */dev/pts*.

Before this Unix98 scheme, master ptys were called */dev/ptyp0*, ... and slave ptys */dev/ttyp0*, ... and one needed lots of preallocated device nodes.

SEE ALSO

getpt(3), **grantpt**(3), **ptsname**(3), **unlockpt**(3), **pty**(7)

COLOPHON

This page is part of release 3.22 of the Linux *man-pages* project. A description of the project, and information about reporting bugs, can be found at http://www.kernel.org/doc/man-pages/.