LINUX OS FILE SYSTEM

A Linux file system is a structured collection of files on a disk drive or a partition. A partition is a segment of memory and contains some specific data.

The Linux OS file system can be explored in greater detail in the following sections of this article.

1. The entire Linux directory structure starting at the top (/) root directory.
2. A specific type of data storage format, such as EXT3, EXT4, BTRFS, XFS, and so on. Linux supports almost 100 types of file systems, including some very old ones as well as some of the newest. Each of these file system types uses its own metadata structures to define how the data is stored and accessed.
3. A partition or logical volume formatted with a specific type of file system that can be mounted on a specified mount point on a Linux file system.

**Top-level Linux directories and their purposes.**

| **Directory** | **Description** |
| --- | --- |
| / (root filesystem) | The root filesystem is the top-level directory of the file system. It must contain all of the files required to boot the Linux system before other file systems are mounted. It must include all of the required executables and libraries required to boot the remaining filesystems. After the system is booted, all other filesystems are mounted on standard, well-defined mount points as subdirectories of the root filesystem. |
| /bin | The /bin directory contains user executable files. |
| /boot | Contains the static bootloader and kernel executable and configuration files required to boot a Linux computer. |
| /dev | This directory contains the device files for every hardware device attached to the system. These are not device drivers, rather they are files that represent each device on the computer and facilitate access to those devices. |
| /etc | Contains the local system configuration files for the host computer. |
| /home | Home directory storage for user files. Each user has a subdirectory in /home. |
| /lib | Contains shared library files that are required to boot the system. |
| /media | A place to mount external removable media devices such as USB thumb drives that may be connected to the host. |
| /mnt | A temporary mountpoint for regular filesystems (as in not removable media) that can be used while the administrator is repairing or working on a filesystem. |
| /opt | Optional files such as vendor supplied application programs should be located here. |
| /root | This is not the root (/) filesystem. It is the home directory for the root user. |
| /sbin | System binary files. These are executables used for system administration. |
| /tmp | Temporary directory. Used by the operating system and many programs to store temporary files. Users may also store files here temporarily. Note that files stored here may be deleted at any time without prior notice. |
| /usr | These are shareable, read-only files, including executable binaries and libraries, man files, and other types of documentation. |
| /var | Variable data files are stored here. This can include things like log files, MySQL, and other database files, web server data files, email inboxes, and much more. |

**Linux process tree:**

What is Linux process tree?

Pstree is a Linux command that shows the running processes as a tree. It is used as a more visual alternative to the ps command. The root of the tree is either init or the process with the given pid.

5 Linux process States?

In Linux, a process is an instance of executing a program or command. While these processes exist, they'll be in one of the five possible states:

* Running or Runnable (R)
* Uninterruptible Sleep (D)
* Interruptable Sleep (S)
* Stopped (T)
* Zombie (Z)

