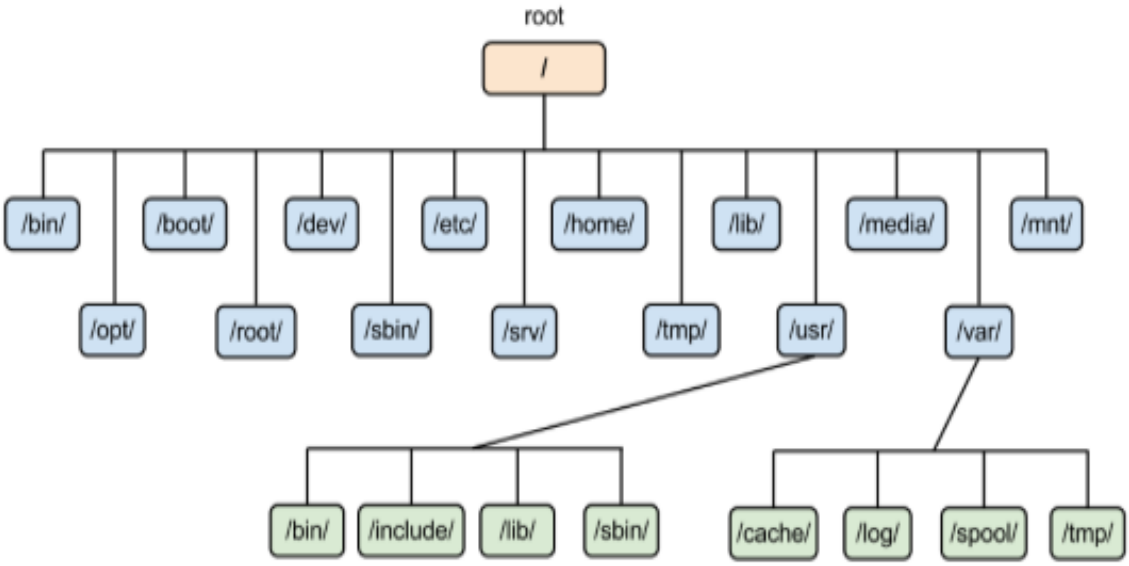
Computer Architecture

Lab 2 (File System Hierarchy Standard in Linux)

Overview

The Filesystem Hierarchy Standard (FHS) defines the directory structure and directory contents in Linux distributions. It is maintained by the Linux Foundation. The latest version is 3.0, released on 3 June 2015. In the FHS, all files and directories appear under the root directory /, even if they are stored on different physical or virtual devices.



File system hierarchy of Linux

Fedora uses the (FHS) file system structure, which defines the names, locations, and permissions for many file types and directories. The directories and files noted here are a small subset of those specified by the FHS system.

The table below lists the main directories commonly used across all platforms.

Directory	Information
/bin	basic commands (static and sharable)
/boot	files and commands required for boot (static and non - sharable)
/dev	device files (static and non - sharable)
/etc	basic configuration files (static and non - sharable)
/home	home directories of all users except root (variable and sharable)
/lib	program libraries (static and non - sharable)
/media	mount point for removable media (variable and sharable)
/mnt	mount point for temporary file system
/opt	applications like OpenOffice (static and sharable)
/proc	kernel processes and resource allocations (variable and non-sharable)
/root	root user directory
/sbin	system administration tools
/tmp	temporary storage (variable and sharable)
/usr	programs and data for users (static and sharable)
/var	variable data like log files, print spools (variable and sharable)

- These directories are organized in a manner which separates various components of the operating system in an easy to manage file structure. The /home directory is where users spend most of their time.
- Files outside of this directory are usually secured so that only the root user can edit or delete them. This protects vital programs and configuration files and prevents users from accidently damaging the core operating system. It also helps secure the system by preventing malicious programs from being able to compromise critical files and settings.

The GNOME Desktop

- GNOME is a desktop environment composed of free and open-source software that runs on Linux and most BSD derivatives. GNOME was originally an acronym for GNU Network Object Model Environment but the acronym was dropped because it no longer reflected the vision of the GNOME project.
- GNOME Shell is the official user interface of the GNOME desktop environment. It features a top bar holding (from left to right) an Activities button, an application menu, a clock and an integrated system status menu. The application menu displays the name of the application in focus and provides access to functions such as accessing the application's preferences, closing the application, or creating a new application window. The status menu holds various system status indicators, shortcuts to system settings, and session actions including logging out, switching users, locking the screen, and suspending the computer.

GNOME Shell Overview mode

1 Activities button	3 Notification area	5 Status menu
2 Dash	4 Search bar	6 Workspace list