

Linux File-System/Directories

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1. /root
 - Every single file and directory starts from the root directory.
 - Only root user has write privilege under this directory.
 - Please note that /root is the user's home directory, which is not same as /.
2. /bin -User Binaries
 - Contain binary executable.
 - Common Linux commands you need to use in single-user modes are located under this directory.
 - Commands used by all the users of the system are located here.
 - For example: ps, ls, ping, grep, cp.
3. /sbin -System Binaries
 - Just like /bin, /sbin also contain binary executable.
 - But the Linux commands located under this directory are used typically by system administrators, for system maintenance purposes.
 - For example: iptables, reboot, fdisk, ifconfig, swapon, init0, init6
4. /etc -Configuration Files
 - Contain configuration files required by all programs.
 - This also contains startup and shutdown shell scripts used to start/stop individual programs.
 - For example: /etc/resolv.conf, /etc/logrotate.conf
5. /dev -Device Files
 - Contain device files.
 - These include terminal devices, usb, or any device attached to the system.
 - For example: /dev/tty1, /dev/usbmono
6. /proc -Process Information
 - Contain information about system process.
 - This is a pseudo file system containing information about the running process. For example /proc/{pid} directory contains information about the process with that particular pid.
 - This is a virtual file-system with text information about system resources. For example: /proc/uptime
7. /var -Variable File
 - var stands for variable file.
 - Contain of the files that are expected to grow can be found under this directory.

- This includes –system log files (/var/log); packages and database file (/var/lib); emails (/var/mail); print queues (/var/spool);lock files (/var/lock); tem files needed across reboots (/var/tmp);
8. /tmp –Temporary Files
 - Directory that contains temporary files created by system and users.
 - Files under this directory and deleted when the system is rebooted.
 9. /usr – User Programs
 - Contains binaries, libraries, documentation and source-code for second level programs.
 - /usr/bin contains binary files for user programs. If you can't find a user binary under /bin, look under /usr/bin. For example: at, awk, cc, less, scp.
 10. /home – Home Directories
 - Home directories for all users to store their personal files.
 - For example: /home/karim, /home/Rahim
 11. /boot – Boot Loader Files
 - Contains boot loader related files.
 - Kernel initrd, vmlinux, grub files are located under /boot.
 - For example: initrd.img-2.6.32-24-generic, vmlinuz-2.6.32-24-generic.
 12. /lib – System Libraries
 - Contain library files that supports the binaries located under /bin and /sbin
 - Library filenames are either ld* or lib*.so.*
 - For example: ld-2.11.1.so, libc.so.5.7
 13. /opt – Optional add-on Applications
 - Opt stands for optional.
 - Contains add-on applications from individual vendors.
 - Add-on applications should be installed under either /opt/ or /opt/sub-directory.
 14. /mnt – Mount Directory
 - Temporary mount directory where sys-admins can mount file-system.
 15. /media – Removable Media Devices
 - Temporary mount directory from removable devices.
 - For examples, /media/cd-rom for CD-ROM; /media/floppy for floppy drives; /media/cd-recorder for CD writer.
 16. /srv – Service Data
 - Srv stands for service.
 - Contains server specific services related data.
 - For example, /srv/cvs contains CVS related data.

Difference between / and /root directory:

- When the First Linux system was made at that time, the root directory didn't exist. But if a root user needed to do some activity (like file creation, move etc), he must have used this directory. But it is very distrusting to create this type of random file. So that later root directory is created only for root user purpose.
- Uname -a

Some other directories in the Linux system:

/boot- It contains all the boot-related information files and folders such as conf, grub, etc.

/dev – It is the location of the device files such as dev/sda1, dev/sda2, etc.

/lib – It contains kernel modules and a shared library.

/lost+found – It is used to find recovered bits of corrupted files.

/media – It contains sub-directories where removal media devices inserted.

/mnt – It contains temporary mount directories for mounting the file system.

/proc – It is a virtual and pseudo-file system to contains info about the running processes with

a specific process ID or PID.

/run – It stores volatile runtime data.

/sbin – binary executable programs for an administrator.

/srv – It contains server-specific and server-related files.

/sys – It is a virtual file-system for modern Linux distributions to store and allows modification

of the devices connected to the system.

System Configuration Files:

/etc/bashrc – It is used by bash shell that contains system defaults and aliases.

/etc/crontab – A shell script to run specified commands on a predefined time interval.

/etc/exports – It contains information on the file system available on the network.

/etc/fstab – Information of the Disk Drive and their mount point.

/etc/group – It is a text file to define Information of Security Group.

/etc/grub.conf – It is the grub bootloader configuration file.

/etc/init.d – Service startup Script.

/etc/lilo.conf – It contains lilo bootloader configuration file.

/etc/hosts – Information of IP and corresponding hostnames.

/etc/hosts.allow – It contains a list of hosts allowed accessing services on the local machine.

/etc/host.deny – List of hosts denied to access services on the local machine.

/etc/inittab – INIT process and their interaction at the various run level.

/etc/issue – Allows editing the pre-login message.

/etc/modules.conf – It contains the configuration files for the system modules.

/etc/motd – It contains the message of the day.

/etc/mtab – Currently mounted blocks information.

/etc/passwd – It contains username, password of the system, users in a shadow file.

/etc/printcap – It contains printer Information.

/etc/profile – Bash shell defaults.

/etc/profile.d – It contains other scripts like application scripts, executed after login.

/etc/rc.d – It avoids script duplication.

/etc/rc.d/init.d – Run Level Initialisation Script.

/etc/resolv.conf – DNS being used by System.

/etc/security – It contains the name of terminals where root login is possible.

/etc/skel – Script that initiates new user home directory.

/etc/termcap – An ASCII file that defines the behavior of different types of the terminal.

/etc/X11 – Directory tree contains all the conf files for the X-window System.

User Related Files:

/usr/bin – It contains most of the executable files.

/usr/bin/X11 – Symbolic link of /usr/bin.

/usr/include – It contains standard include files used by C program.

/usr/share – It contains architecture independent shareable text files.

/usr/lib – It contains object files and libraries.

/usr/sbin – It contains commands for Super User, for System Administration.

Log Files:

/var/log/lastlog – It stores user last login info.

/var/log/messages – It has all the global system messages.

/var/log/wtmp – It keeps a history of login and logout information.

Virtual and Pseudo Process Related Files:

/proc/cpuinfo – CPU Information

/proc/filesystems – It keeps the useful info about the processes that are running currently.

/proc/interrupts – it keeps the information about the number of interrupts per IRQ.

/proc/ioprocs – Contains all the Input and Output addresses used by devices on the server.

/proc/meminfo – It reports the memory usage information.

/proc/modules – Currently using kernel module.

/proc/mount – Mounted File-system Information.

/proc/stat – It displays the detailed statistics of the current system.

/proc/swaps – It contains swap file information.

Version Information File:

/version – It displays the Linux version information.