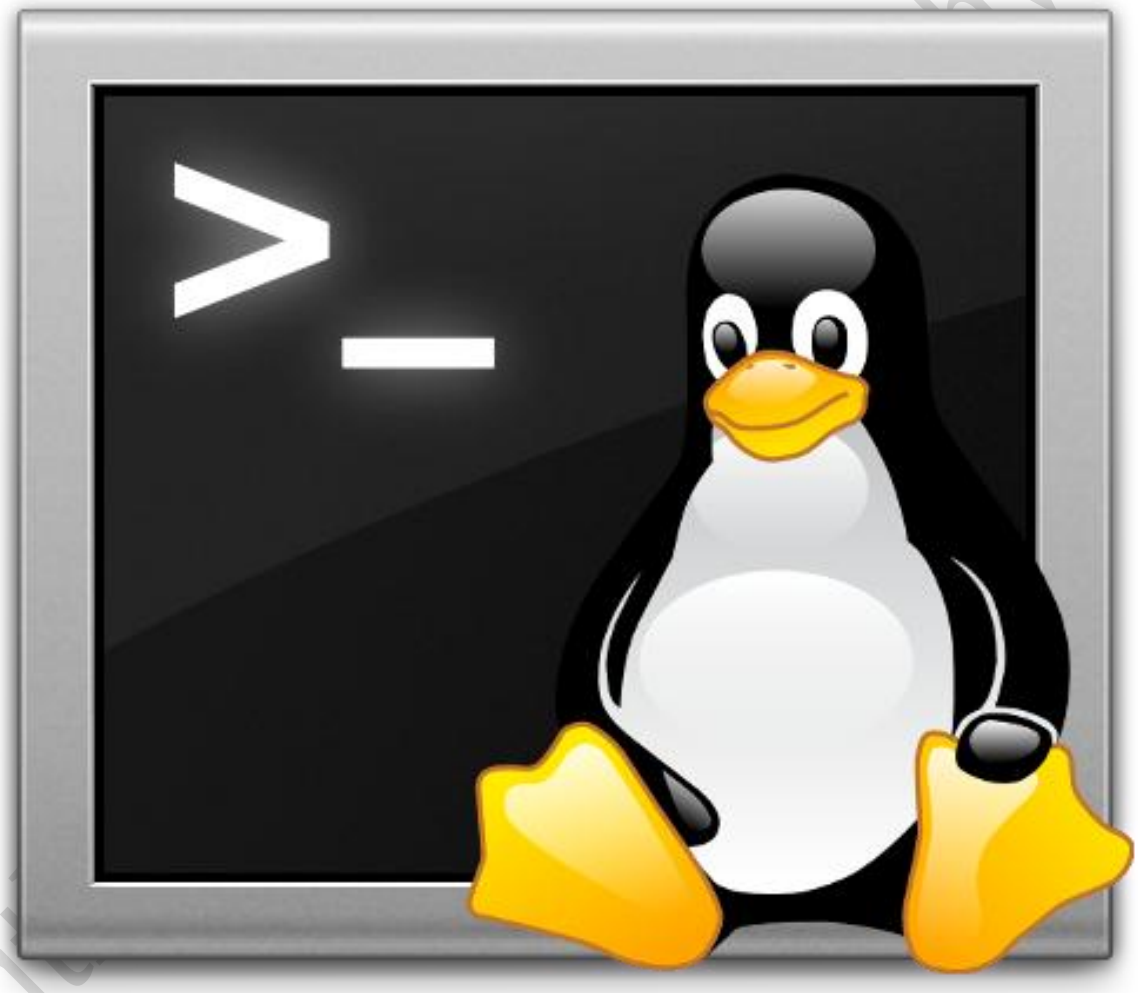


Contents

Basic Linux commands:

- ls: List directory contents
- cd: Change directory
- pwd: Print working directory
- mkdir: Make a directory
- rmdir: Remove directory
- touch: Create a new file
- rm: Remove files or directories
- cp: Copy files or directories
- mv: Move or rename files or directories
- man: Display the user manual
- echo: Display a message or data
- chmod: Change file permissions
- chown: Change file owner and group
- ps: Display a list of currently running processes
- kill: Kill a process
- top: Display system summary and processes
- df: Display disk space usage
- du: Estimate file and directory space usage
- cat: Concatenate and display file content
- nano, vi, mousepad: Text editors
- clear: Clear the terminal screen
- exit: Exit the terminal

Networking Commands:

1. ping: Test the network connection between the host and a destination computer.
   - Example: ping google.com
2. ifconfig (or ip a): Display or configure a network interface.
3. netstat: Display network connections, routing tables, interface statistics, etc.
   - Example: netstat -tuln (Displays listening ports)
4. traceroute: Display the route and transit delays of packets across a network.
   - Example: traceroute google.com
5. nslookup: Query the DNS to obtain domain name or IP address mapping.

   - Example: `nslookup google.com`
6. `dig`: DNS lookup utility.
   - Example: `dig google.com`
7. `route`: Show or manipulate the IP routing table.
   - Example: `route -n`
8. `ss`: Utility to investigate sockets.
   - Example: `ss -tuln`
9. `iwconfig`: Configure a wireless network interface.

Service Commands:

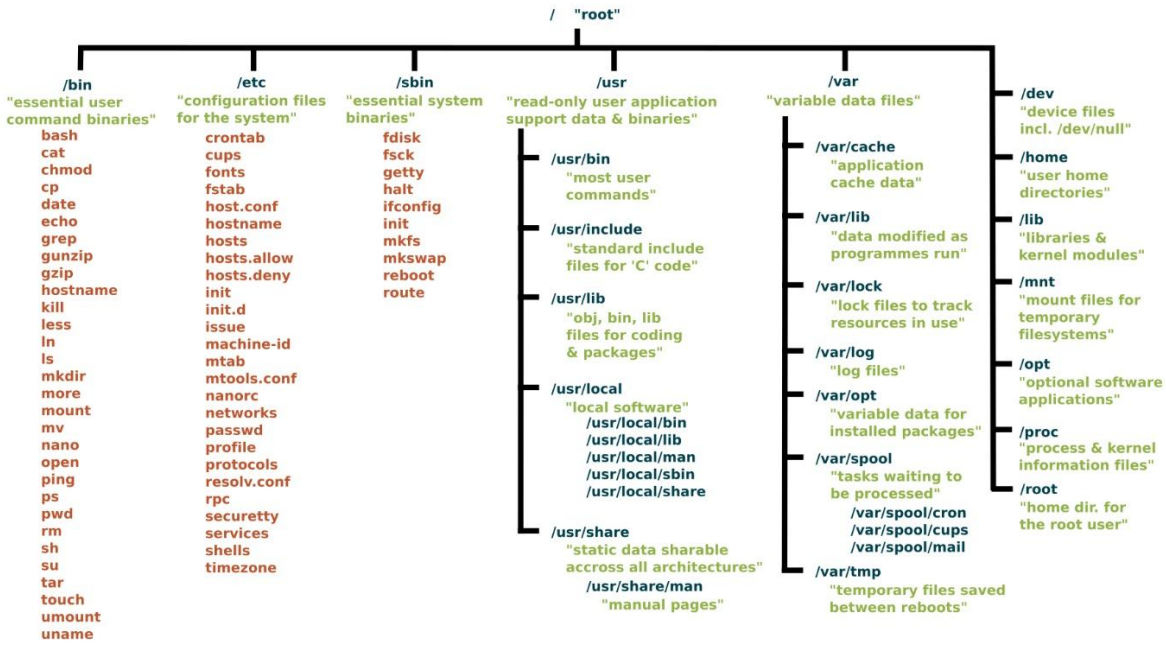
1. `systemctl`: Control the systemd system and service manager. o
   - Example: `systemctl start service_name` (Starts a service)
   - Example: `systemctl stop service_name` (Stops a service)
   - Example: `systemctl status service_name` (Checks the status of a service)
2. `service`: Utility for initializing and managing services.
   - Example: `service service_name start`
3. `journalctl`: Query and display messages from the journal.
   - Example: `journalctl -u service_name` (Displays logs for a specific service)
4. `chkconfig`: Tool for managing SysV init scripts.
   - Example: `chkconfig --list` (Lists all services and their status)
5. `ufw`: Uncomplicated Firewall, a user-friendly way to manage iptables.
   - Example: `ufw enable` (Enables the firewall)
   - Example: `ufw allow 22/tcp` (Allows SSH traffic)

System Administration Commands:

1. `sudo`: Execute a command as the superuser or another user.
   - Example: `sudo apt-get update` (Updates the package list on Debian-based systems)
2. `apt-get or yum or dnf`: Package management commands for Debian-based (apt-get) or Red Hat based (yum/dnf) systems.
   - Example: `apt-get install package_name` (Installs a package on Debian-based systems)
   - Example: `yum install package_name` (Installs a package on older Red Hat-based systems)

   - Example: `dnf install package_name` (Installs a package on newer Red Hat-based systems)
3. `passwd`: Change a user's password.
   - Example: `passwd username`
4. `useradd and userdel`: Add or delete a user account.
   - Example: `useradd new_username`
   - Example: `userdel username`
5. `groupadd` and `groupdel`: Add or delete a group.
   - Example: `groupadd new_groupname`
   - Example: `groupdel groupname`
6. `df`: Display disk space usage for file systems.
   - Example: `df -h` (Displays in human-readable format)
7. `du`: Estimate file and directory space usage.
   - Example: `du -sh directory_name` (Displays total space used by a directory)
8. free: Display the amount of free and used memory in the system.
   - Example: `free -m` (Displays memory info in MB)
9. `top or htop`: Display dynamic real-time view of running processes.
   - Example: `top`
   - Example: `htop` (Note: htop might need to be installed separately)
10. `uname`: Display system information.
   - Example: `uname -a` (Displays all system information)
11. `lshw`: List hardware configuration.
   - Example: `lshw -short` (Provides a concise overview of the system's hardware)
12. `shutdown or reboot`: Shutdown or reboot the system.
   - Example: `shutdown -h now` (Shuts down the system immediately)
   - Example: `reboot` (Reboots the system)
13. `crontab`: Schedule tasks to run automatically at specified intervals.
   - Example: `crontab -e` (Edit the current user's cron jobs)
   - Example: `crontab -l` (List the current user's cron jobs)
14. `tar`: Archive files.
   - Example: `tar -czvf archive_name.tar.gz directory_name` (Creates a gzipped tarball)
15. `gzip and gunzip`: Compress or decompress files.
   - Example: `gzip file_name` (Compresses a file)
   - Example: `gunzip file_name.gz` (Decompresses a gzipped file)

Linux file system/ Directory:



Explanation of Each Directory:

1. **/ (Root):** The starting point for the file system hierarchy. All other directories are subdirectories of the root directory.
2. **/bin:** Contains essential command binaries required for booting and repairing the system.
3. **/etc:** Holds system-wide configuration files and shell scripts used to initialize system settings for applications.
4. **/home:** Home directories for all users. Each user has a subdirectory named after their username.
5. **/var:** Contains variable data files such as logs, databases, and temporary files.
6. **/usr:** Contains user binaries, libraries, documentation, etc. It's a secondary hierarchy for read-only user data.
7. **/lib:** Contains essential shared libraries and kernel modules.
8. **/dev:** Contains device files which represent hardware components.
9. **/tmp:** Temporary storage for files. It's cleared on system reboot.
10. **/opt:** Optional application software packages.
11. **/sbin:** Contains system binaries essential for booting, restoring, and recovering the system.
12. **/srv:** Contains data for services provided by the system.
13. **/proc:** A virtual filesystem that provides detailed information about kernel and processes.
14. **/sys:** A virtual filesystem that provides an interface to kernel data structures.
15. **/run:** Contains runtime data for processes started since the last boot.
16. **/boot:** Contains files needed to start the boot process.
17. **/mnt:** Temporary mount points for mounting filesystems.
18. **/media:** Mount points for removable media like USB drives and CDs.