

It is an interface between user and computer.

Provide the environment to create, run & access many applications.

Types of OS:

1. windows-microsoft
2. Android OS-Google-mobile applications.
3. Linux-no company-it purpose
4. mac OS-Apple-mobile/Tab applications
5. Unix-similar to linux
6. ios-Apple-system applications

window OS:

1. Developed by Microsoft in the year 1985.
2. It has a GUI (Graphical User Interface).
3. It is a user-friendly OS.
4. It is a commercially used OS(paid).
5. single user based OS-only one person can use to connect the data.
6. Less secure than other OS.
7. Limited to completely personal usage.

[3:05 PM, 3/19/2025] Sai Nishanth Varma: Linux OS:

1. Developed by Linus Tordvalds in 1991.
2. CLI
3. Linux OS is a type of OS which is very similar to unix and is built in linux kernel.
4. Linux kernel is the brain of the OS bcoz it is an interface between user and computer (h/w, peripherals, resources) .
5. Multiple users can access this OS.
6. Very high security features are available when compared with other OS.
7. Linux is a distributed OS (600+ linux distributions: redhat, ubuntu, centos, fedora, amazon linux, laki linux, SUSE linux, ...)
8. Community based OS (can modify as per our requirements).

[8:52 PM, 3/19/2025] Sai Nishanth Varma: 9. It is a user friendly & network friendly OS.

10. Linux provides the privacy of users.
11. Provides high stability (rarely slows-down & freezes-no need to reboot & restart it will be done by itself directly/immediately).
12. High flexibility.
13. Linux is compatible with large no of files.
14. Linux can perform tasks evenly though it is having less space on its hard disk
15. Tree structure.

Disadvantages:

1. It is not very user friendly-bcoz beginners can be confused.
2. It has smaller peripherals.

Linux cmd

- ls - List files and directories.
- pwd - Print current working directory.
- cd - Change directory.
- mkdir - Create a new directory.
- rmdir - Remove an empty directory.
- rm - Remove files or directories.
- cp - Copy files or directories.
- mv - Move or rename files and directories.
- find - Search for files in a directory hierarchy.
- locate - Find a file by name using a database.
- ls -l - List files with permissions.
- chmod - Change file permissions.
- chown - Change file owner and group.
- chgrp - Change group ownership of a file.
- cat - Display the contents of a file.
- tac - Display the contents of a file in reverse order.
- head - Display the first few lines of a file.
- tail - Display the last few lines of a file.
- less - View file content page by page.
- grep - Search for a pattern in files.
- awk - Text processing tool.
- sed - Stream editor for modifying files.
- ps - Show running processes.
- top - Display running processes dynamically.
- kill - Terminate a process using its PID.
- pkill - Kill processes by name.
- jobs - List background jobs.
- bg - Resume a suspended process in the background.
- fg - Bring a background process to the foreground.
- df - Show available disk space.
- du - Show disk usage of files and directories.
- mount - Mount a filesystem.
- umount - Unmount a filesystem.
- fsck - Check and repair a filesystem.
- whoami - Show the current user.
- who - Show who is logged in.
- id - Display user ID and group ID.
- groups - Show groups of a user.
- useradd - Create a new user.
- passwd - Change user password.

- usermod - Modify a user account.
- userdel - Delete a user.
- groupadd - Create a new group.
- groupdel - Delete a group.
- ifconfig - Display network configuration (deprecated, use ip instead).
- ip a - Show IP addresses of network interfaces.
- ping - Send ICMP echo request to check network connectivity.
- traceroute - Show the path packets take to a network host.
- netstat - Show network connections (deprecated, use ss instead).
- ss - Display network sockets.
- curl - Transfer data from or to a server.
- wget - Download files from the web.
- scp - Securely copy files between systems.
- rsync - Synchronize files between systems.
- apt-get - Install, update, or remove packages (Debian/Ubuntu).
- yum - Install, update, or remove packages (RHEL/CentOS).
- dnf - Modern package manager (Fedora/RHEL/CentOS).
- zypper - Package manager for openSUSE.
- rpm - Manage RPM packages.
- dpkg - Manage Debian packages.
- uptime - Show system uptime.
- free - Display memory usage.
- vmstat - Show system performance metrics.
- iostat - Display CPU and I/O statistics.
- sar - Collect and report system performance.
- tar - Archive files.
- zip - Compress files into a ZIP archive.
- unzip - Extract files from a ZIP archive.
- gzip - Compress files using Gzip.
- bzip2 - Compress files using Bzip2.
- shutdown - Shut down the system.
- reboot - Reboot the system.
- halt - Stop all system processes.
- poweroff - Turn off the computer.
- echo - Print text to the terminal.
- date - Show the current date and time.
- cal - Show a calendar.
- history - Display command history.
- alias - Create an alias for a command.
- unalias - Remove an alias.
- env - Display environment variables.
- export - Set an environment variable.
- which - Locate a command's executable.

