



What is Linux?

Linux is an open-source operating system based on the Unix operating system. It was developed by Linus Torvalds in 1991 and has since become one of the most popular and widely used operating systems in the world.

Linux is known for its stability, security, and flexibility. It is used on a wide range of devices, from servers and

mainframes to desktop computers and mobile devices.

The term "Linux" is often used to refer to both the kernel and the entire operating system.





Why Linux?

- 1. Flexibility and Customization
- 2. Stability and Reliability
- 3. Security
- 4. Open Source and Free
- 5. Vast Software Ecosystem
- 6. Compatibility and Portability
- 7. Performance and Efficiency
- 8. Community and Support

These advantages, among others, have made Linux a preferred choice for a wide range of users, including individuals, developers, organizations, and even major technology companies.





LINUX IMPLEMENTATIONS IN REAL WORLD





Linux Has Many Distributions



Linux Architecture

Linux architecture consists of several components that work together to form the operating system.

- 1. Kernel: Core component that manages hardware and software interaction.
- 2. System Libraries: Building blocks for software development and task handling.
- 3. System Utilities: Tools for system configuration, package management, and more.
- 4. Shell: Command-line interface for user interaction and executing commands.
- 5. Graphical Server: Infrastructure for graphical display and user interface.
- 6. Desktop Environment: User-friendly interface including panels and file managers.
- 7. Applications and Services: Wide range of software for productivity and more.



Ethics of Linux

Linux is built on a foundation of opensource values such as collaboration and transparency. It is free to use, modify, and distribute. Linux also promotes privacy and security by allowing users to control their own data and software.



Linux File System Hierarchy



Command Line Interface

- Command Line Interface (CLI) is a text-based interface where users enter commands to interact with a computer system.
 It relies on a software program called a shell, which interprets
- and executes these commands.
 Shells offer features such as command history, tab
- completion, and scripting capabilities.
 They interpret user commands, handle input/output
- redirection, manage processes, and provide access to various system utilities and programs.
 - Linux offers different shells, such as Bash, Zsh, Fish, and Ksh,
- each with its own syntax and features.
 The CLI and shell provide efficiency, flexibility, remote access,
- scripting capabilities, and are commonly used for server administration and development tasks.





Future of Linux?

Trends & Innovation

While Linux faces competition from other operating systems, its key advantages such as stability, security, flexibility, and open-source nature position it well for future success.

The future of Linux appears promising and robust for several reasons:

- Containerization and Orchestration Edge
- Computing and IoT

- Artificial Intelligence and Machine Learning
- Security Enhancements

- Energy Efficiency and Green Computing Desktop and
- User Experience Enhancements Integration with
- Cloud Technologies

Course Belongs To Linux

- 1. Linux Administration
- 2. Linux Networking
- 3. Linux Shell Scripting
- 4. Linux Server Administration
- 5. Linux Security

These are just a few examples and there are many other specialized Linux courses available, depending on your specific interests and career goals.







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