

Introduction to Linux OS

Linux is a powerful, open-source operating system widely used for servers, desktops, and embedded systems. It is known for its stability, security, and flexibility.

Linux Kernel

The Linux Kernel is the core of the operating system. It manages hardware resources, system processes, memory, and device drivers. Developed by Linus Torvalds in 1991, the kernel is continuously improved by a global community.

Shell

The shell is a command-line interface that allows users to interact with the operating system. Popular shells include Bash, Zsh, and Fish. The shell interprets user commands and executes them, providing access to system utilities and scripting capabilities.

Important Utilities

Linux provides a rich set of command-line utilities for system management and productivity, such as:

- `ls`: Lists directory contents
- `cd`: Changes directories
- `cp`, `mv`, `rm`: File management commands
- `grep`: Searches text using patterns
- `top`, `ps`: Process monitoring
- `chmod`, `chown`: File permissions management

These components together make Linux a versatile and robust operating system for various computing needs.