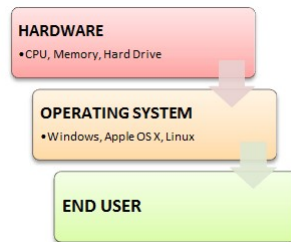


What is Linux?

Linux® is an [open source](#) operating system (OS).

An [operating system](#) is the software that directly manages a system's hardware and resources, like CPU, memory, and [storage](#). The OS sits between applications and hardware and makes the connections between all of your software and the physical resources that do the work.

Think about an OS like a car engine. An engine can run on its own, but it becomes a functional car when it's connected with a transmission, axles, and wheels. Without the engine running properly, the rest of the car won't work.



- **Linux and open source**
- Linux is a free, open source operating system, released under the [GNU General Public License \(GPL\)](#). Anyone can run, study, modify, and redistribute the source code, or even sell copies of their modified code, as long as they do so under the same license.
- Linux has become the largest [open sources software](#) project in the world. Professional and hobbyist programmers from around the world contribute to the Linux kernel, adding features, finding and fixing bugs and security flaws, and providing new ideas—all while sharing their contributions back to the community.

- **Why do you need an OS?**
- Every time you switch on your computer, you see a screen where you can perform different activities like write, browse the internet or watch a video. What is it that makes the computer hardware work like that? How does the processor on your computer know that you are asking it to run a mp3 file?
- Well, it is the operating system or the kernel which does this work. So, to work on your computer, you need an Operating System(OS). In fact, you are using one as you read this on your computer. Now, you may have used popular OS's like Windows, Apple OS X, but here we will learn what Linux is and what benefits it offers over other OS choices.

- **Who created Linux?**
- Linux is an operating system or a kernel which germinated as an idea in the mind of young and bright **Linus Torvalds** when he was a computer science student. He used to work on the **UNIX OS (proprietary software)** and thought that it needed improvements.
- However, when his suggestions were rejected by the designers of UNIX, he thought of launching an OS which will be **receptive to changes, modifications suggested by its users.**

- **How does Linux work?**
- [Linux](#) was designed to be similar to UNIX, but has evolved to run on a wide variety of hardware from phones to [supercomputers](#). Every Linux-based OS involves the [Linux kernel](#)—which manages hardware resources—and a set of software packages that make up the rest of the operating system.
- The OS includes some common core components, like the [GNU tools](#), among others. These tools give the user a way to manage the resources provided by the kernel, install additional software, configure performance and security settings, and more. All of these tools bundled together make up the functional operating system. Because Linux is an open source OS, combinations of software can vary between Linux distributions.

- **What's a command line?**
- The command line is your direct access to a computer. It's where you ask software to perform hardware actions that point-and-click graphical user interfaces (GUIs) simply can't ask.
- Command lines are available on many operating systems—proprietary or open source. But it's usually associated with Linux, because both command lines and open source software, together, give users unrestricted access to their computer.
- latest release of [Red Hat® Enterprise Linux](#) comes with even more built-in command line capabilities than ever before and includes consoles that bundle those capabilities in easy-to-use modules that exist off of the command line.

- **The benefits of using Linux**

Linux now enjoys popularity at its prime, and it's famous among programmers as well as regular computer users around the world. Its main benefits are -

- ❖ It offers a **free operating system**. You do not have to shell hundreds of dollars to get the OS like Windows!
- ❖ Being open-source, anyone with programming knowledge can modify it.
- ❖ The Linux operating systems now offer **millions of programs/applications to choose from**, most of them free!
- ❖ Once you have Linux installed, you no longer need an antivirus! Linux is a highly secure system. More so, there is a global development community constantly looking at ways to enhance its security. With each upgrade, the OS becomes more secure and robust
- ❖ Linux is the OS of choice for Server environments due to its stability and reliability (Mega-companies like Amazon, Facebook, and Google use Linux for their Servers). A Linux based server could run non-stop without a reboot for years on end.

What does Linux include?

Kernel

The base component of the OS. Without it, the OS doesn't work. The kernel manages the system's resources and communicates with the hardware. It's responsible for memory, process, and file management.

System user space

The administrative layer for system level tasks like configuration and software install. This includes the shell, or [command line](#), daemons, processes that run in the background, and the desktop environment, the interface the users interacts with.

Applications

A type of software that lets you perform a task. Apps include everything from desktop tools and programming languages to multiuser business suites. Most Linux distributions offer a central database to search for and download additional apps.