

# **Introduction to Linux**

Linux is a free and open-source Operating System (OS). Much like Windows or macOS, it manages the communication between computer hardware (CPU, memory, storage) and software applications. However, unlike proprietary systems, Linux is "open source," meaning its original code is available for anyone to view, modify, and distribute.

## **Linux History and Philosophy**

### **History :**

Linux was created in 1991 by Linus Torvalds, a Finnish computer science student. He originally wanted a free operating system similar to MINIX (an educational version of UNIX) that he could run on his personal computer. He shared his code online, inviting developers from around the world to contribute, which led to the rapid growth of the system.

### **Philosophy :**

The Linux philosophy is based on the UNIX philosophy, which emphasizes:

- Modularity: Programs should do one thing and do it well.
- Freedom: Users should have the freedom to run, copy, distribute, study, change, and improve the software.

## **Origins: Linux, GNU/Linux**

A common misconception is that "Linux" is the entire operating system. Technically, Linux is just the Kernel—the core component that controls the hardware.

For the Kernel to be useful, it needs tools (like text editors and compilers). In the early 1990s, the GNU Project (started by Richard Stallman) had created these tools but lacked a working kernel. When Linus Torvalds' kernel was combined with GNU tools, the complete operating system was formed. This is why many experts refer to the system as GNU/Linux.

# Overview of Ubuntu, Fedora, CentOS

Because Linux is open-source, anyone can package the Linux Kernel with their own selection of software. These different versions are called Distributions (Distros).

