

1. Introduction to Linux and Ubuntu

What is Linux?

Linux is an open-source operating system (OS) based on the Unix architecture. It is widely used for servers, desktops, and embedded systems due to its security, stability, and flexibility.

What is Ubuntu?

Ubuntu is a popular Linux distribution (or distro) developed by **Canonical Ltd.** It is known for its user-friendly interface, security, and vast community support, making it a preferred choice for beginners and professionals alike.

History of Ubuntu

- **Founded:** Ubuntu was first released on **October 20, 2004**, by Mark Shuttleworth and Canonical Ltd.
- **Based on:** It is based on **Debian**, another popular Linux distribution.
- **LTS & Regular Releases:** Ubuntu offers **Long-Term Support (LTS) versions** (supported for five years) and **regular releases** (supported for nine months).

Popular Ubuntu Versions

- **Latest LTS:** Ubuntu **22.04 LTS (Jammy Jellyfish)** (Released in April 2022)
- **Upcoming Release:** Ubuntu **24.04 LTS (Noble Numbat)** (Expected in April 2024)
- **Variants:** Ubuntu comes in different flavors like **Ubuntu Desktop, Ubuntu Server, Ubuntu Studio, Kubuntu, Xubuntu, and Lubuntu** for various user needs.

2. Features of Ubuntu

- ✓ **Open Source & Free** – No cost to download, use, or modify.

- ✓ **Security & Stability – Regular updates and built-in security features.**
- ✓ **Lightweight & Fast – Consumes fewer system resources compared to Windows.**
- ✓ **Customization – Supports different desktop environments like GNOME, KDE, XFCE, etc.**
- ✓ **Software Availability – Access to thousands of applications via Ubuntu Software Center & APT package manager.**
- ✓ **Terminal & Command-line Power – Efficient for developers and IT professionals.**
- ✓ **Compatibility – Runs on different hardware, including old PCs, cloud servers, and IoT devices.**
- ✓ **Frequent Updates – New features and security patches are released regularly.**

3. Difference Between Ubuntu and Windows OS

Feature	Ubuntu (Linux-based)	Windows (Microsoft-based)
Cost	Free & Open Source	Paid (License required)
User Interface	GNOME/KDE (Customizable)	Windows Explorer (Fixed UI)
Performance	Lightweight, runs smoothly on low-end PCs	Heavier, requires more resources
Security	Highly secure (fewer viruses)	More vulnerable to malware
Software Support	Supports open-source apps (LibreOffice, GIMP)	Runs proprietary apps (MS Office, Adobe)
Updates	Frequent updates, user-controlled	Forced updates by Microsoft
Customization	Highly customizable	Limited customization
Command Line Usage	Terminal is widely used	Mostly GUI-based, PowerShell available
File System	Ext4, XFS, Btrfs	NTFS, FAT32, exFAT

