# STUDY OF UBUNTU OS

## 1. Introduction

Ubuntu is one of the most popular Linux-based operating systems, known for its ease of use, stability, and security. It is an open-source OS developed and maintained by Canonical Ltd. Unlike proprietary systems like Windows, Ubuntu is free to download, install, and modify. It is widely used for desktops, servers, and cloud computing environments.

### History & Versions

Ubuntu was first introduced in October 2004 by Mark Shuttleworth to make Linux more accessible to a wider audience. It is based on Debian and follows a regular release cycle, with new versions being launched every six months. Long-Term Support (LTS) versions, which receive security updates for five years, are released every two years.

Notable Ubuntu versions include:

• Ubuntu 20.04 LTS (Focal Fossa) – Released in April 2020  
• Ubuntu 22.04 LTS (Jammy Jellyfish) – Released in April 2022  
• Ubuntu 23.10 (Mantic Minotaur) – Released in October 2023  
• Ubuntu 24.04 LTS (Noble Numbat) – Expected in April 2024

Ubuntu is available in different flavors, such as Ubuntu Desktop for general users, Ubuntu Server for web hosting, and Ubuntu Core for IoT devices. Additionally, variants like Kubuntu, Xubuntu, and Lubuntu provide alternative desktop environments.

## 2. Features of Ubuntu

Ubuntu offers a variety of features that make it one of the most widely used Linux distributions. These features provide security, stability, and flexibility for different types of users, from beginners to advanced developers.

Some key features of Ubuntu include:

• Free & Open-Source – Ubuntu is completely free to use, and its source code is available for modification, making it highly flexible.

• Security & Stability – Ubuntu is less prone to malware and security vulnerabilities compared to proprietary operating systems. Regular updates ensure system security.

• Customizability – Users can choose different desktop environments such as GNOME, KDE, XFCE, and MATE to personalize their experience.

• Frequent Updates – Ubuntu receives regular updates that include security patches, bug fixes, and new features.

• Lightweight & Fast – Compared to Windows, Ubuntu runs efficiently on low-end hardware, making it ideal for older computers.

• Software Support – Ubuntu comes with pre-installed applications such as LibreOffice, Firefox, and Thunderbird, and additional software can be installed via the APT package manager.

• Support for Developers – Ubuntu is a preferred choice for developers due to its support for multiple programming languages such as Python, Java, and C++, along with built-in tools like Git and Docker.

• Community Support – Ubuntu has a large and active community that provides extensive documentation and troubleshooting support.

• Gaming Support – With the introduction of tools like Steam Proton and Lutris, Ubuntu is becoming more compatible with gaming.

## 3. Difference Between Ubuntu and Windows OS

Ubuntu and Windows are two of the most commonly used operating systems, but they differ significantly in terms of licensing, performance, security, and customization. Below is a comparison of key differences:

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| Feature | Ubuntu OS | Windows OS |
| License | Open-source & free | Proprietary & paid |
| Customization | Highly customizable with different desktop environments | Limited customization |
| Security | More secure, less prone to malware | More vulnerable to security threats and viruses |
| Software | Supports open-source applications | Supports commercial and proprietary applications |
| Performance | Lightweight, runs efficiently on older hardware | Resource-intensive, requires higher system specs |
| User Interface | Uses GNOME, KDE, XFCE, etc. | Uses Windows Explorer UI |
| Updates | Frequent and fast updates with rolling releases | Less frequent updates, often causing system slowdowns |
| File System | Uses EXT4, XFS, Btrfs | Uses NTFS, FAT32 |
| Gaming Support | Growing support through Steam Proton and Wine | Native support for most games |
| Cost | Completely free | Requires a paid license for full features |