

Operating System

(4ITRC2)

IT IV Semester

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Aim:

To install and study Ubuntu OS.

1. Introduction

What is Linux?

Linux is an open-source, Unix-like operating system that serves as the foundation for various distributions, including Ubuntu. It was originally developed by **Linus Torvalds** in **1991** and has since evolved into a robust and widely-used operating system.

What is Ubuntu?

Ubuntu is a **Linux distribution** based on **Debian**, developed and maintained by **Canonical Ltd.** It is designed to be **user-friendly**, secure, and open-source, making it a popular choice for both beginners and professionals.

Ubuntu Versions and History

Ubuntu releases a new **Long-Term Support (LTS)** version every **two years**, providing **five years** of security updates. Some of the recent LTS versions include:

- **Ubuntu 22.04 LTS (Jammy Jellyfish) - Released in April 2022**
- **Ubuntu 20.04 LTS (Focal Fossa) - Released in April 2020**
- **Ubuntu 18.04 LTS (Bionic Beaver) - Released in April 2018**

Canonical also releases **interim versions** every six months, which are supported for only nine months.

2. Features of Ubuntu

Ubuntu offers several key features that make it a preferred operating system:

1. **Free and Open-Source** – Ubuntu is free to use, modify, and distribute.
2. **User-Friendly Interface** – The **GNOME** desktop environment provides an intuitive and easy-to-use interface.
3. **Software Center** – A built-in store to download applications easily.
4. **Security and Stability** – Ubuntu provides **regular security updates** and **low virus risk** compared to Windows.
5. **Performance** – Lightweight and efficient, Ubuntu runs smoothly even on older hardware.
6. **Customization** – Users can personalize the UI, themes, and behavior.
7. **Multiple Flavors** – Available in different versions like **Ubuntu Desktop, Ubuntu Server, Kubuntu, Xubuntu, and Lubuntu**.
8. **Pre-installed Applications** – Includes Firefox, LibreOffice, Thunderbird, and many development tools.
9. **Snap Package Support** – Makes installing and updating software easy.
10. **Command-Line Interface (CLI)** – The **Terminal** provides powerful tools for automation and system management.

Difference Between Ubuntu and Windows OS

Feature	Ubuntu (Linux)	Windows OS
Cost	Free and open-source	Paid (license required)
Security	Highly secure with fewer viruses	More prone to malware and viruses
Customization	Highly customizable	Limited customization options
User Interface	Uses GNOME, KDE, or other DEs	Uses the Windows GUI
Software Management	Uses apt, snap, and package managers	Uses .exe and Microsoft Store
Performance	Faster and more efficient on older hardware	Requires more system resources
File System	Uses EXT4, Btrfs, XFS	Uses NTFS, FAT32
Command-Line	Terminal with bash, zsh, etc.	Command Prompt and PowerShell
Gaming Support	Limited but improving (Steam, Proton)	Excellent gaming support
System Updates	Updates are lightweight and user-controlled	Frequent, sometimes forced updates
Corporate Use	Popular for servers, cloud, and development	Widely used in offices and businesses