4ITRC2

Operating System Lab

Lab Assignment 1

Aim: To install and study Ubuntu OS

To perform: Install VMware or Virtual Box and Ubuntu over Windows OS

To Submit: Study of Ubuntu OS

Your submission should include writeup in following headings

1. Introduction (in brief about linux and ubuntu, its versions + some history)

2. Features of Ubuntu

3. Difference between ubuntu and windows OS.

SUBMITTED TO: SUBMITTED BY:

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**Introduction to Linux and Ubuntu**

Linux is an open-source operating system based on the UNIX architecture. It was first developed by Linus Torvalds in 1991 and has since grown into a robust and widely used OS, known for its security, stability, and flexibility. Linux distributions (or distros) are different versions of Linux, customized to meet various user needs. Some popular distros include Debian, Fedora, and Ubuntu.

Ubuntu, one of the most popular Linux distributions, was developed by Canonical Ltd. and first released in 2004. It is based on Debian and is designed to be user-friendly while maintaining the power and flexibility of Linux. Ubuntu follows a predictable release cycle, with Long-Term Support (LTS) versions released every two years and interim versions released every six months. The latest versions of Ubuntu include improvements in security, UI enhancements, and better hardware support.

**Features of Ubuntu**

1. **Open-Source and Free**: Ubuntu is completely free to use, modify, and distribute. Its open-source nature allows developers worldwide to contribute to its improvement.
2. **Security and Stability**: With built-in security features, Ubuntu is less prone to viruses and malware. It has a strong permission-based system, reducing unauthorized access.
3. **Regular Updates**: Ubuntu receives frequent updates, including security patches and new features, ensuring a smooth and secure experience.
4. **User-Friendly Interface**: The default desktop environment, GNOME, provides an intuitive and modern user experience. Other desktop environments like KDE and XFCE are also available.
5. **Customizability**: Users can tweak Ubuntu extensively, from the UI to system configurations, allowing for greater control over the operating system.
6. **Software Availability**: Ubuntu comes with a vast software repository, including office applications (LibreOffice), web browsers (Firefox, Chrome), multimedia tools, and development tools.
7. **Lightweight and Performance-Oriented**: Ubuntu runs efficiently even on older hardware, making it an excellent choice for various devices.
8. **Strong Community Support**: With a large global user base and forums, help and troubleshooting solutions are easily accessible.

**Difference Between Ubuntu and Windows OS**

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| **Feature** | **Ubuntu** | **Windows OS** |
| **Cost** | Free and open-source | Paid, with licensing costs |
| **Security** | Highly secure, fewer viruses | More vulnerable to malware and cyber threats |
| **Performance** | Efficient on low-end systems | Can be resource-intensive |
| **Customization** | Highly customizable | Limited customization options |
| **Software Support** | Supports open-source applications | Supports proprietary software extensively |
| **File System** | Uses EXT4, XFS, Btrfs | Uses NTFS, FAT32 |
| **User Interface** | GNOME, KDE, XFCE, and more | Standard Windows UI with Start Menu and Taskbar |
| **Updates** | Regular security and feature updates | Forced updates can sometimes disrupt workflow |
| **Command Line Usage** | Strong dependency on Terminal for tasks | GUI-oriented, but supports PowerShell and CMD |
| **Gaming** | Limited game compatibility | Extensive gaming support with DirectX |