

Lecture 2 Introduction to Linux Notes

Important concepts:

- **Operating System:**
 - An operating system provides all fundamental software features of a computer. An OS enables you to use the computer's hardware providing you the basic tools that make the computer useful. All of those features relay on the OS's kernel. Other OS features are owed to additional programs that run atop the kernel.
- **Kernel:**
 - An OS kernel is a software component that's responsible for managing low-level features of the computer, including the following managing system hardware, memory allocation, CPU time, and program to program interaction.
- **Components of an operating system:**
 - Command-Line Shells
 - Graphical User Interfaces
 - Utility and Productivity Programs
 - Libraries
- **Linux :**
 - A Unix-like OS popular in academic and business environments.
- **Linux Characteristics:**
 - Open source software
 - Free of charge
 - Includes many Unix tools
 - Highly scalable
 - Many businesses rely on it
 - Majority of server applications run on it
 - Can install Linux on almost any system
- **GNU Toolchain:**
 - A collection of compilers, libraries, debuggers, and core utilities modeled on Unix
- **Linux Distribution:**
 - A complete Linux system package.
- **What is Ubuntu:**
 - A Linux distribution, freely available with both community and professional support.
- **Ubuntu Release cycles:**
 - Shipped in stable and regular release cycles. Regular or Non-LTS and LTS
- **What is Debian:**
 - An all-volunteer organization dedicated to developing free software and promoting the ideals of the Free Software community
- **Different software licensing models (open source vs closed source):**
 - Open Source
 - Closed Source
 - Freeware
 - Shareware
- **The 4 Freedoms of Free Software:**

- Freedom 0: use the software for any purpose
- Freedom 1: examine the source code and modify it as you see fit
- Freedom 2: redistribute the software
- Freedom 3: redistribute your modified software
- **Virtualization:**
- Creating virtual versions of something
- **Hypervisor and types:**
- Software or Hardware in charge of creating, managing, and running virtual machines.
- Type 1(bare-metal hypervisor) runs directly on hardware.
- Type 2 is an application that runs on top of an operating system
- **VirtualBox:**
- a powerful virtualization product for enterprise as well as home use.

List of the main Linux distributions

Debian Redhat Slackware Arch Linux

List of some of the Debian Based Linux distributions

Ubuntu Pop OS

List of some of the Red Hat-based Linux distributions

Fedora Alma Linux

List of some of the Ubuntu Based Linux Distributions

Linux Lite Linux Mint Peppermint Pop OS