

Lecture 2 Introduction to Linux Notes

Important concepts:

- **Operating System:** An operating system provides all fundamental software features of a computer.
- **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 interaction.
- **Components of an operating system:** Command-Line Shells, Graphical User Interfaces, Utility and Productivity Programs, Libraries.
- **Linux :** is a Unix-like operating system popular in academic and business environments.
- **Linux Characteristics:** open source software, free of charge, Unix tools, highly scalable, vast majority of server applications, you can install it on any system.
- **GNU Toolchain:** is a collection of compilers, libraries, debuggers, and core utilities modeled on Unix. It's been ported to many Unix-like operating systems, and is used by default on GNU/Linux systems.
- **Linux Distribution:** are made available in either a short release cycle or a long release cycle. Distributions with short release cycles aim to provide the latest software possible, whereas those with longer release cycles strive to provide the most stable environments possible.
- **What is Ubuntu:** Ubuntu is a Linux distribution, freely available with both community and professional support.
- **Ubuntu Release cycles:** Ubuntu is shipped in stable and regular release cycles. Regular or non LTS, is shipped every six months and supported for 9 months. LTS is shipped every two even years and is supported for 5 years.
- **What is Debian:** Debian is 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):** Software is a type of intellectual property that is governed by copyright laws. Open source , the software may be distributed for a fee or free. The source code is distributed with the software. Closed source, the software is not distributed with the source code. The user is restricted from modifying the code.
- **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:** is defined as 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) The type of hypervisor is basically the operating system for the physical machine. Type 2 hypervisor is an application that runs on top of an operating system.
- **VirtualBox:** is a powerful x86 and AMD64/intel64 virtualization product for enterprise as well as home use.

List of the main Linux distributions

- Red hat
- Debian
- Slackware

List of some of the Debian Based Linux distributions

- Linux Mint
- Kali Linux
- Parrot OS
- Linux Deepin
- SteamOS

List of some of the Red Hat-based Linux distributions

- Tao
- StartCom
- CERN
- BioBrew

List of some of the Ubuntu Based Linux Distributions

- LibreOffice
- Web Browser
- Email Client
- App Store(Software Center)