

Lecture 2 Introduction to Linux Notes

Important concepts:

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- **Operating System** : An operating system provides all fundamental software features of a computer.
- **Kernel**:An OS kernel is a software component that's responsible for managing low-level features of a computer.
- **Components of an operating system**:Hardware, Linux Kernel, Daemons & Shells, Graphical Desktop Environment,Applications
- **Linux** :Linux is a Unix-like Operating System popular in academic and business environments
- **Linux Characteristics**:Open Source software, free of charge, inc. many Unix tools, highly customizable, applicable on almost any system
- **GNU Toolchain**:is a collection of compilers, libraries, debuggers, and core utilities modelled on Unix.
- **Linux Distribution**:a complete system package.
- **What is Ubuntu**: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 every six months and supported for 9
- **What is Debian**:An all volunteer organization dedicated to developing free software
- **Different software licensing models (open source vs closed source)**:open source: source code distributed with the software closed source: User is restricted from modifying the source 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**:Tech that you can use to create virtual representations of servers, storage, networks, and other physical machines
- **Hypervisor and types**:type 1 : runs directly on the host machine's physical hardware, known as bare-metal hypervisor. Type 2 : runs on the operating system of the physical host machine, hence, call hosted hypervisors
- **VirtualBox**:cross platform virtualization software. allows users to extend their existing computer to run multiple operating systems including Microsoft Windows, Mac OS X, Linux, and

Oracle Solaris at the same time.

List of the main Linux distributions

Ubuntu, Debian, Fedora, Arch Linux, openSUSE, CentOS

List of some of the Debian Based Linux distributions

Linux Mint, MX Linux, PureOS, developing

List of some of the Red Hat-based Linux distributions

Rocky Linux, AlmaLinux, Oracle Linux, Fedora

List of some of the Ubuntu RBased Linux Distributions

Lubuntu, Ubuntu Budgie, Zorin OS, Xubuntu, KDE neon