

Lecture 2 Introduction to Linux Notes

Important concepts:

- **Operating System:**
- An operating system provides all the fundamental software features of a computer
- **Kernel:**
- 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 interactions
- **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, many Unix tools, Highly scalable and customizable, can be installed on almost any system
- **GNU Toolchain:**
- a collection of compilers, libraries, debuggers, and core utilities modeled on Unix
- **Linux Distribution:**
- an entirely open source or free software
- **What is Ubuntu:**
- a linux distribution freely available with both community and professional support
- **Ubuntu Release cycles:**
- - Regular or Non-LTS: shipped every 6 months and supported for 9 months
 - LTS (Long-Term Support): shipped every 2 even years and is supported for 5 years
- **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 is when the software may be distributed for a fee or free. The source code is distributed with the software. Closed source is when the software is not distributed with the source code. The user is restricted from modifying the code.
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- **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
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- **Virtualization:**
- defined as creating virtual versions of something
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- **Hypervisor and types:**
- software or hardware in charge of creating, managing, and running virtual machines
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- **VirtualBox:**
- a powerful x86 and AMD64/Intel64 virtualization product for enterprise as well as home use

List of the main Linux distributions

- Debian
- Red Hat
- Slackware

List of some of the Debian Based Linux distributions

- Ubuntu
- Devuan
- Q4OS

List of some of the Red Hat-based Linux distributions

- CentOS
- Fedora
- Oracle Linux

List of some of the Ubuntu Based Linux Distributions

- Linux Mint
- Poseidon Linux
- Zorin OS