

Lecture 2 Introduction to Linux Notes

Important concepts:

- **Operating System:**
 - The OS is the fundamental software of a computer. It utilizes the hardware of the pc to give basic tools in making your computer useful.
- **Kernel:**
 - The kernel is a software component responsible for managing low level features in the pc
- **Components of an operating system:**
 - The components of an operating system are command line shells, graphical user interfaces, utility and productivity programs and libraries.
- **Linux :**
 - Linux is a unix-like os that consists of kernels, libraries and utilities to make up the entire os.
- **Linux Characteristics:**
 - Linux is free of charge, can be installed in any computer, customizable and is open source.
- **GNU Toolchain:**
 - a collection of compilers, libraries, debuggers, and core utilities modeled on unix
- **Linux Distribution:**
 - The Linux distribution consists of the Linux kernel, core unix tools such as the GNU tool set, supplemental software such as user applications, startup scripts, and an installer.
- **What is Ubuntu:**
 - Ubuntu is a linux distribution available for free with community and professional support.
- **Ubuntu Release cycles:**
 - The release cycles are Regular or Non-LTS ships every 6 months, LTS - ships every two years
- **What is Debian:**
 - Debian is a volunteer organization that's dedicated to making free software and promoting the ideas of the free software community. It is known as the grandfather of linux distributions alongside others.
- **Different software licensing models (open source vs closed source):**

- The different types of software licensing models are open source - software can be distributed for a fee or free. closed source - the software is not distributed with the source code. freeware - The software is free but the source code is not available. shareware - Thhe software is free on a trial basis. free software - the software is distributed with the source code.
- **The 4 Freedoms of Free Software:**
 - The four freedoms of free software are Freedom 0, use of software for any purpose Freedom 1, examine the source code and modify it as you see fit Freedom 2, redistribute software and Freedom 3 redistribute your modified software.
- **Virtualization:**
 - its the process of creating virtual versions of something. It can run with multiple OSs on a physical machine.
- **Hypervisor and types:**
 - A hypervisor is software or hardware that is in charge of creating, managing, and running virtual machines. The two types are Type 1 Bare-metal - runs directly on hardware. type 2 - an application that runs on top of the os.
- **VirtualBox:**
 - Virtualbox is a x86 AMD64/Intel64 product for either home or enterprise usage

List of the main Linux distributions

- Debian
- Pop OS
- Redhat
- Alma Linux

List of some of the Debian Based Linux distributions

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

List of some of the Red Hat-based Linux distributions

- WGS Linux Pro
- Caldera
- Ultra Penguin
- Mandrake

List of some of the Ubuntu Based Linux Distributions

- Linux lite
- Linux mint

- Elementary OS
- Pop OS