

Lecture 2 Introduction to Linux Notes

1. What is an Operating System?

* An operating system provides all fundamental software features of a computer. The OS allows users to use the computer's hardware providing users the basic tools that make a computer useful.

2. What is a kernel?

* The kernel is a software component that is responsible for managing low-level features of the computer such as the system hardware, CPU time, memory allocation, and programs being able to interact with each other.

3. Which other parts aside from the kernel identify an OS?

* A OS is not only identified by the kernel but also by whether it has common-line shells, graphical user interface, utilities and productivity programs, and libraries.

4. What is linux?

* Linux is an open source operating system very similar to Unix and is used by many businesses and academic environments.

5. What is a linux distribution?

* A Linux distribution is a complete Linux system package. It can be an OS but with Linux kernel still involved in the background. Some Linux distributions are for sale since they include proprietary components.

6. List at least 4 linux characteristics:

- * Linux is open source software
- * Linux is free of charge to install
- * Linux is very scalable and customizable
- * Linux can be installed in almost any system since it supports almost every processor architecture

7. What is Ubuntu?

* Ubuntu is a linux distribution which is freely available to all users and has a strong community with professionals to support.

8. What is Debian?

* Debian is an all-volunteer organization with a mission statement to develop free software to the public. Debian is known to be the grandfather of all linux distributions along with slackware and open suse.

9. List and define the different types of licensing agreements.

- * 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.
- * Freeware = the software is free but the source code is not available.
- * Shareware = the software is free on a trial basis.

10. What is Free Software? Define the 4 freedoms.

- * Free software is software that is distributed with the source code. The four freedoms are:
- * Freedom 0 = the freedom to use the software for any purpose.
- * Freedom 1 = the freedom to to examine the source code and modify it.
- * Freedom 2 = the freedom to redistribute the software.
- * Freedom 3 = the freedom to redistribute own modified software.

11. What is virtualization?

- * Virtualization is to create a virtual version of something.

12. List 3 benefits of virtualization:

- * Virtualization allows to run multiple OSs in one machine without dual booting.
- * Virtualization allows apps to be tested in a sandbox environment before

installing them into host machines.
* Virtualization reduces costs by decreasing the need for physical hardware.

13. What is a hypervisor? Include definitions of the 2 types.

* A hypervisor is the software/hardware in charge of creating, managing, and running virtual machines. There are two types of hypervisor which are type 1 and type 2. Type 1 is when the hypervisor is basically the OS for the physical machines with no host OS involved making Type 1 faster than Type 2 since Type 2 hypervisor runs applications on top of the host OS.

14. What is the difference between Guest OS and Host OS?

* The host OS is running on the physical main computer you are working on while the guest OS is being virtualized in the virtual machine.

15. What is VirtualBox?

* VirtualBox is a powerful x86 AMD64/Intel64 virtualization hypervisor for enterprise or home use.