Lecture 2 Introduction to Linux Notes

1. What is an Operating System

an operating system provides all fundamental software features of a computer. An OS enables you to use the computers hardware providing you the basic tools that make the computer useful.

2. What is a kernel?

an OS kernel is a software component thats responsible for managing low-level features of the computer,including the following managing system hardware,memory allocation,CPU time, and program to program interaction.

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

there is command-line shells,graphical user interfaces,utility and productivity programs,also libraries.

4. What is linux?

Linux is a Unix-like operating system popular in academic and business environments.

5. What is a linux distribution?

a Linux distribution consist of a linux kernel , core unix tools,supplemental software,startup scripts ,and an installer.

6. List at least 4 linux characteristics:

Linux is open source,free of charge,highly scalable,and includes many unix tools.

7. What is Ubuntu?

Ubuntu is a Linux Distribution,freely available with both community and professional support.

8. What is Debian?

Debian is an all-volunteer organization dedicated to developing free software and promoting thr ideals of the free software community.

9. List and define the different types of licensing agreements

- Open Source: The software maybe distributed for a fee or for 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.

1. # What is Free Software? Define the 4 freedoms.

2. Free software: The software is distributed with the source code.The software can be free of charge or obtained by a fee.

- 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

3. # What is virtualization?

virtualization is defined as creating virtual versions of something .

4. # List 3 benefits of virtualization

- allows running multiple OSs on one machine without dual booting.
- allows applications to be tested before installing them on a host machine.
- offer the ability to save the state of a machine at a given time and roll it back or forward.

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

Hypervisor is a software or hardware in charge of creating ,managing, and running virtual machine.

- Type 1 : this type of hypervisor runs direct on there hardware. this hypervisor is basically the operating system for the physical machine .Type 1 has better performance then Type 2, because there is no OS involved and the system is dedicated to supporting virtualization .
- Type 2: hypervisor its an application that runs on top of an operating system .This is the most commonly used in client-side virtualization. keep in mind that the host OS consumes resources and a host OS failure means that the virtual machines will fail as well.

6. # What is the difference between Guest OS and Host OS?

The Host OS ,is a operating system that is running in the computer where the hypervisor is installed . The Guest OS, is a operating system that is being virtualized in the virtual machine.

8. # What is virtualbox?

VirtualBox is a powerful x86 and AMD64/Intel64 virtualization product for enterprise as well as home use.