

OPS235: Week 1



Installing Linux (Lab1: Investigations 1-4)



Agenda: Lab 1

- Thinking Ahead (Tips / Warnings):
 - Required Materials / Coming Prepared to Labs
 - Importance of Mastering the CLI (Command Line Interface)
 - Host vs Virtual Machines
 - Importance of Setting Correct Partition Sizes
 - Application Management
 - SELinux
 - Completing Labs for “sign-off”
- Lab 1 Debriefing:
 - Reinforcing Concepts / Commands



Thinking Ahead: Coming Prepared to Labs

- **HardDisk** (SATA removable hard drive)
 - Minimum: 250 GB (500 GB recommended)
- **USB Stick** (2 GB or greater)
- **CENTOS 6.5 x86_64 Installation DVD** (Used in lab 1)
- **CENTOS 6.5 x86_64 Live DVD** (Used in future labs)
- **Log Book (Lab 1), extra paper** to make notes.
- **Access to Lab instructions** (via web browser)
(Hint: use your smart phone, net-book, or notebook computer)

NOTE: Always bring all materials to every class / lab!



Thinking Ahead: Challenge Yourself!

Not having all of the required materials for the lab will slow you down during your lab time!

Suggestions:

- View beginning section of lab prior to class to determine what to bring to class. **For example, forgetting the lab-logbook notes will prevent your instructor from signing-off on your completed lab!**
- Treat each time in the lab as a “learning opportunity”. You should not only take notes, but ***challenge yourself*** how to work efficiently using both graphical and command-line techniques.
- Always bring all materials to lab, and treat your removable hard disk carefully (for example, cushions for the removable hard-drive, and try to prevent any impact to the removable hard drive)



Thinking Ahead: Host vs. Virtual Machines

- **You have only 1 hard disk** to use to complete all 8 labs for this course.
- During these labs, you need to learn how to install different versions of Linux operating systems, and allow them to communicate, network with each other, while they are running at the same time!
- This task would be challenging without using:
 - **Host / Virtual Machines** (to have multiple OS's running at same time)
 - **LVM (Logical Volume Manager)** to manage storage space.
- **LVM** and **Virtual Machines** are important concepts to know when you are installing an operating system. We will discuss them in more detail in future labs.



Thinking Ahead: Carefully Follow Instructions!

- Hard Disk **Partitions** are simply smaller logical storage units (containers) within a hard disk (or storage device).
- **Advantages of Hard Disk Partitioning:**
 - Separate OS files from data (easier recovery).
 - Use of different operating systems.
 - Separating of Data for efficient access / sharing.
- Note: During installation process, it is **very** important to **follow all instructions** in order to have installation program create the following partitions and sizes: **otherwise, you will experience problems** in your later labs:
 - **20 GB** for / (root)
 - **30 GB** for /home
 - **8 GB** for /swap
 - **100 GB** for /var/lib/libvirt/images (for Virtual Machines)



Thinking Ahead: Collecting OS information

Application Management:

- Another major responsibility of a system administrator is to install and maintain applications. Not all applications are available from “default OS installs”. Usually only users with administration privileges can install applications on computer systems.
- It is common for companies to document what applications have been installed on their computer systems. For example, hardware and software *profiles* or *asset inventories* are usually generated in companies or organizations in order to help support IT professions.
- You will be learning in lab 1 how to gather application and network information by issuing several Linux commands.



Thinking Ahead: Prepare for the Lab “Sign-off”

Lab Completion - Instructor Sign-Off:

- In order to properly complete labs in this course, you **MUST** have your instructor “check” or “sign-off” on your lab work.
- Students are required to view the “Completing The Lab” section located near the bottom of the lab instructions.
- **In order to save time, students must have all work ready to show instructor BEFORE calling over instructor for checking.**

Tip: open multiple windows (shells) with command output to speed up checking-time. Have these results available **PRIOR** to calling instructor for lab “sign-off”.

- **Simply asking the instructor “what to do”, is not a great way to “impress your instructor”**. Marks will be deducted in assignments and online tests if students fail to have work already available for checking....



Lab 1: Debriefing

General Review Questions:

- What materials were required for lab #1?
- How long did install take?
- What common mistakes could be made?
- What is an example of a good root password?
- What is difference between **su** and **su -** ?
- Why should SE Linux be disabled on Host Machine?



Lab 1: Debriefing

- What are commands to determine how many packages were installed?
- Why would it be important to determine number of applications installed?
 - What are other commands to get:
 - **Name of host**
 - **Kernel version**
 - **All Processes running on Linux server**
- Do you have any ideas why it is useful to determine the name of host and the Linux Kernel version?



Lab 1: Debriefing

- Why would it be important to obtain network information after the OS install?
 - What is the purpose of the following commands:
 - **ifconfig**
 - **route**
 - **Netstat**
 - **nslookup**
- What **SELinux**? How do you disable SELinux?