OPS235: Lab 2

Virtual Machines – Part I
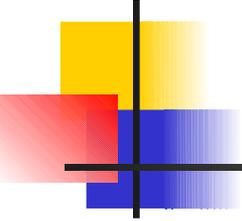
Lab 2 Topics – Part I

Topics

- Preparation for Lab 2 (Investigations 1 - 4)
- **Virtual Machine** (**VM**) Definition (Features)
- **Repositories** (Purpose)
- Installing **VM**s (comparisons):
  - By DVD
  - By Network
 - Recording in Comparison Chart
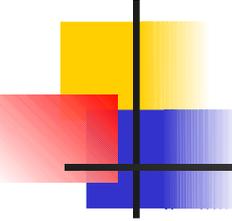
Preparation for Lab #2

Have Instructor "Sign-off" on Lab #1

- **Hard-disk** (removable drive) – minimum 250 Gb with partitions created from Lab 1, **USB Drive**.

- **CENTOS 6.5 Live CD**.

- **Lab 2 Log Book**, **extra paper** to make notes.
  - Note: Constantly refer and make notes to "**Installation Table" in Investigation 4** while performing each type of Virtual Machine (VM) install of the Linux OS!
  - It is **highly recommended** to perform all network installs at the college (using **belmount.senecac.on.ca** repository).
  - You **MUST** perform **Investigation 3** (network install via "kickstart" file) at Seneca's lab.

Virtual Machines (VMs)

- According to Wikipedia: *"A **virtual machine (VM)** is a software implementation of a machine (i.e. a computer) that executes programs like a physical machine."*

- For example, a Linux distribution running in its own **"virtual world"** as a program that is running on another Linux distribution.

- This should not be too difficult to understand since gamers are already used to playing in "virtual worlds".

HOST MACHINE (**c6host**)

| Virtual Machine 1 (**centos1**) | Virtual Machine 2 (**centos2**) | Virtual Machine 3 (**centos3**) |
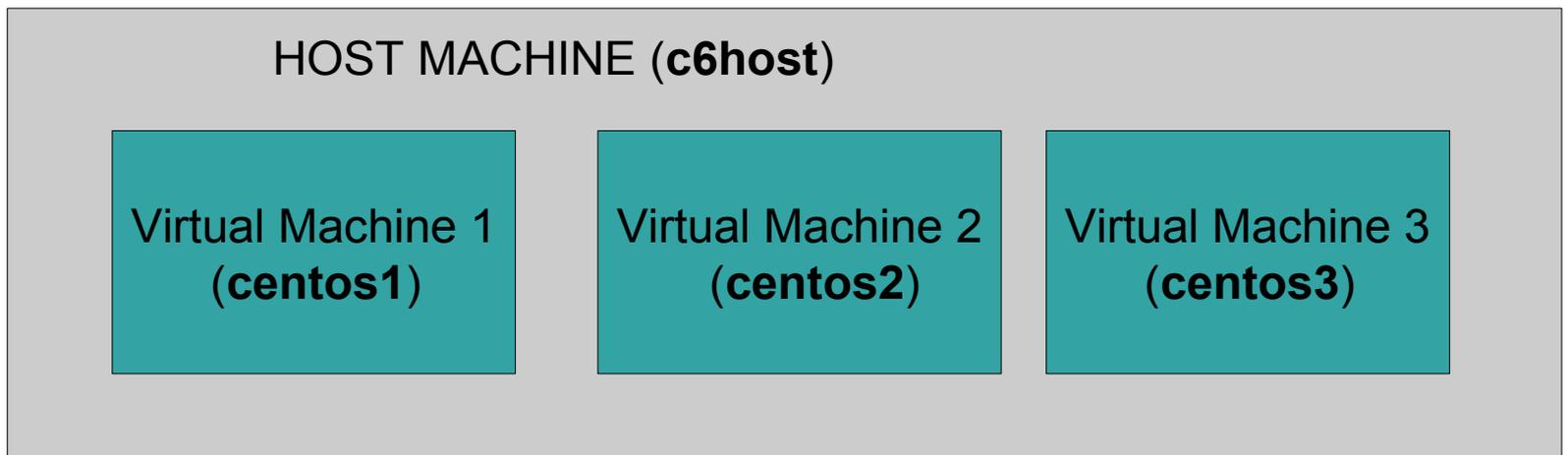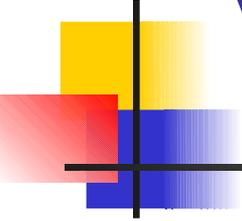
Virtual Machines (VMs)

- There are many advantages of using VMs:

  - **Software testing** -- Test software on different platforms.

  - **Network simulation** -- Testing network services, security.

  - **Server consolidation** -- saves hardware, administration, cooling, and electricity costs.

  - **Penetration testing** -- Safe environment to "play".

  - **Load-balancing** and **disaster recovery**
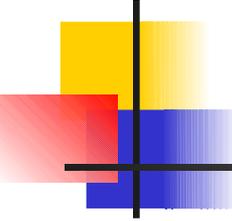
Repositories

- A **repository** is a central location online where software packages (including OS) can be retrieved and installed.

- Different Linux distributions have different software package managers that use these repositories:
  - Fedora: **yum**, (**Anaconda OS installer)**
  - Ubuntu: **Synaptic Package Manger**
  - SuSE: **YAST** (**Y**et **A**nother Set-up **T**ool)

- These packages have the ability for other repositories or types of packages to be used. For example: Updates, "leading-edge" packages, etc…

  NOTE: Make notes in comparison chart to be recorded in **Lab2 Investigation 4** as you work on **investigations 1 – 3**!
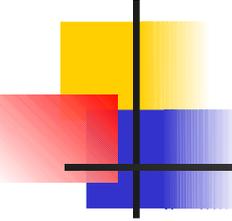
Investigation 1

- How do you install Visualization package? What is its name?

- What is the command to launch the virtual Manager?

- What are the general steps to create a virtual machine?

- What are the general steps to perform a CENTOS LIVE DVD install on a virtual machine?

- What are the steps to allow you to **ssh** between physical machine and virtual machine? What problems from lab1 could prevent using **ssh** or **scp**?

- Why is it important to perform software upgrades for each computer (host and VM) for each lab?
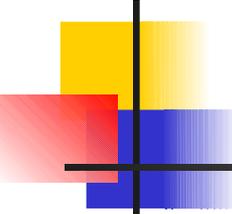
Investigations 2 and 3

- What are the general steps to perform a network install on a virtual machine?

- What is the purpose of the **kickstart** file?

- What are the advantages / limitations of using **kickstart** as opposed to a regular network install?