

OPS235

Configuring a Network Using
Virtual Machines - Part I



Lab 6 - Topics

Investigations 1 - 4

- Networking in Virtual Machines:
 - Purpose / Advantages
 - Current Configuration
 - Static vs Dynamic IP Addressing
- Configuring Virtual Machine Networks
 - Initial Set-up
 - Using **system-config-network**
 - Using Command Line



Networking in Virtual Machines

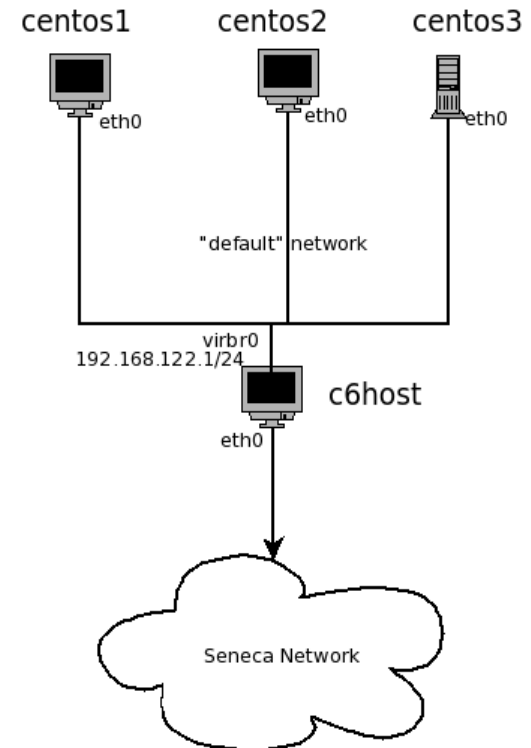
- A **virtual network** is a computer network that consists, at least in part, of virtual network links.

(Wikipedia: http://en.wikipedia.org/wiki/Virtual_network)

- It was stated in a previous lesson that there are advantages of forming virtual networks to gain skills.
- The basic challenge from this course is: **limited hardware resources**, but students can learn important networking commands and techniques on one computer by using a virtual network.

Current VM Network Configuration

- **c6host** has 1 active network interface (probably **eth0**) that receives IP configuration from the School's DHCP server.
- **c6host** has 1 active network interface (**virbr0**) that acts as a “virtual bridge” and has a static default configuration of **192.168.122.1/255.255.255.0**
- **VMs** have active interfaces (**eth0**) that receives a dynamic configuration from your **c6host** .





Static vs Dynamic Addressing

Although Dynamic addressing can be convenient for automatically assigning IP address to client upon bootup (portable computer such as netbooks), there are still **advantages of using Static IP addresses:**

- Supports name resolution.
- Better network security.
- Good reliable “second-choice” if network does not support DHCP.



Networking in Virtual Machines

- We may need to manually configure Virtual networks in order to customize their set-up for ease of use and consistency.
- How to Create a new Virtual Network?
- How to Configure a Static Network:
 - Graphical Method: **system-config-network**
 - Command Line: **ifconfig, route, /etc/resolv.conf**