CIS 192 Linux Lab Exercise

Lab X1: Permanent NIC Configuration (Extra Credit)
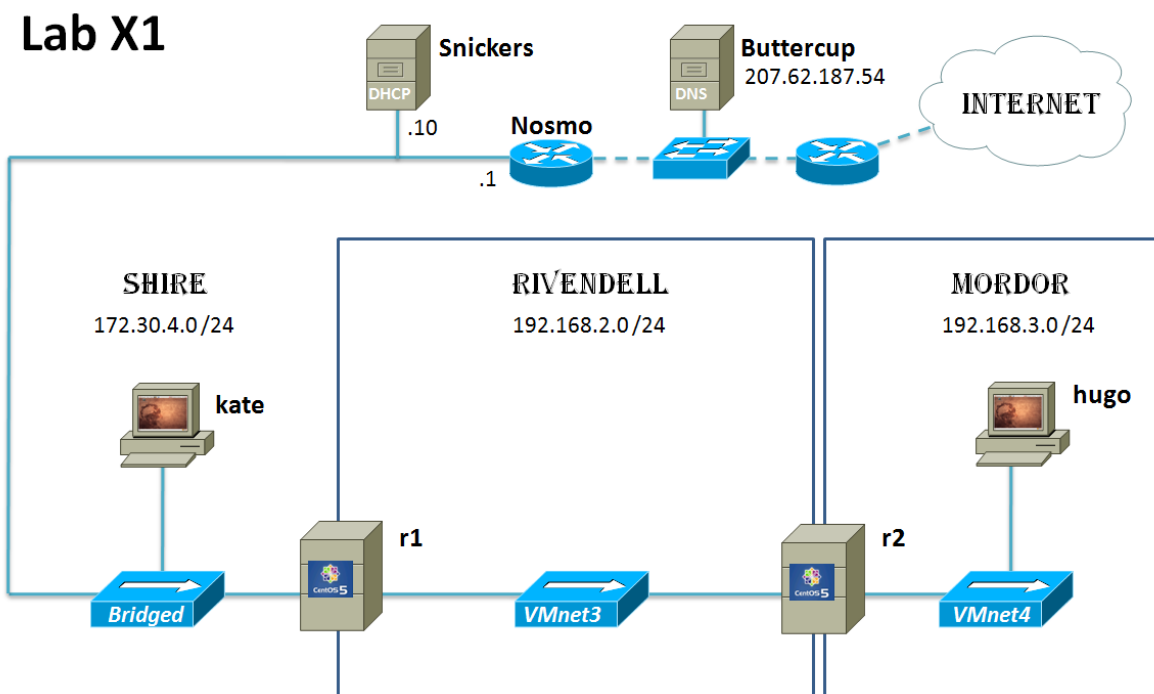## Spring 2009

Lab X1: Permanent NIC configuration (Extra Credit)

This extra credit lab is a modified version of Lab 3. Instead of using temporary NIC configuration methods you will instead edit configuration files so the settings will persist after system restarts.

Supplies

- VMWare Server 1.08 or higher
- 192 VMs: Frodo, Celebrian, Elrond, and Sauron
- Virtual networks: VMnet3 (Rivendell) and VMnet4 (Mordor)

Preconfiguration

- Original versions of all VMs. Note, this will set the network configurations back to down or DHCP settings.

Forum

Use the forum to ask questions, collaborate, post tips and any lessons learned when you have finished. Forum is at: http://simms-teach.com/forum/viewforum.php?f=18

Procedure

Implement the diagram above using permanent network configurations on each system. You will be changing hostnames (not the VM names) so use this table as a guide:

Virtual Machine	Hostname
Frodo (Ubuntu)	kate
Celebrian (CentOS)	r1
Elrond (CentOS)	r2
Sauron (Ubuntu)	hugo

1. Make a network map showing all networks (with prefixes), all interfaces (showing interface name and IP address), systems (showing hostname, default gateway and any static routes). For this lab you will need to do an **electronic version** that can be emailed.
2. Cable your VMs
3. Configure permanent configuration settings on each system:
   a. hostname
   b. static IP address(es) using IP table in the appendix
   c. default gateway
   d. DNS settings
   e. static routes (as needed)
   f. IP forwarding on the routers
4. Test
   a. Ping kate from hugo
   b. Ping google.com from r1

To turn in

A) Results
   Your *labX1* **text** file should contain the following sections.

   - Standard boilerplate information:
     – CIS 192 Lab *XX*
     – *Name*
     – *Date*
     – TBA hours*: X.X*
     – Station number: CIS-Lab-*XX*
   - For the CentOS routers:
     ▪ All /etc/sysconfig/network-scripts/ifcfg-eth* files
     ▪ /etc/sysconfig/network
     ▪ All /etc/sysconfig/network-scripts/route-eth* files
     ▪ /etc/sysctl.conf
     ▪ /etc/resolv.conf
   - For the Ubuntu hosts:
     ▪ /etc/network/interfaces

- ▪ /etc/hostname
- ▪ /etc/resolv.conf
- The successful ping from hugo to kate
- The successful ping from r1 to google.com
- Command summary (documented examples of key commands for future reference)

Check your work for completeness then submit as many times as you wish up until the due date deadline. Remember, **late work is not accepted**, so start early, plan ahead for things to go wrong and use the forum to ask questions.

[p]scp labX1 cis192@opus.cabrillo.edu:labX1.lastname

B) Your network map
Email me an electronic version at **risimms@cabrillo.edu**

Grading rubric (30 points)

2 points for complete submittal, professional appearance and quality
3 points for correct network configuration on kate
3 points for correct network configuration on r1
3 points for correct network configuration on r2
3 points for correct network configuration on hugo
4 points for successful kate ping (from hugo)
4 points for successful Google ping (from r1)
2 points for useful command summary
6 points for complete and accurate network map

Appendix

Static IP Address Table:

Station	IP	Static 1	Static 2
CIS-Lab-01	172.30.4.101	172.30.4.121	172.30.4.122
CIS-Lab-02	172.30.4.102	172.30.4.123	172.30.4.124
CIS-Lab-03	172.30.4.103	172.30.4.125	172.30.4.126
CIS-Lab-04	172.30.4.104	172.30.4.127	172.30.4.128
CIS-Lab-05	172.30.4.105	172.30.4.129	172.30.4.130
CIS-Lab-06	172.30.4.106	172.30.4.131	172.30.4.132
CIS-Lab-07	172.30.4.107	172.30.4.133	172.30.4.134
CIS-Lab-08	172.30.4.108	172.30.4.135	172.30.4.136
CIS-Lab-09	172.30.4.109	172.30.4.137	172.30.4.138
CIS-Lab-10	172.30.4.110	172.30.4.139	172.30.4.140

CIS-Lab-11	172.30.4.111	172.30.4.141	172.30.4.142
CIS-Lab-12	172.30.4.112	172.30.4.143	172.30.4.144
Pod 1		172.30.4.113	172.30.4.145
Pod 2		172.30.4.114	172.30.4.146
Pod 3		172.30.4.115	172.30.4.147
Pod 4		172.30.4.116	172.30.4.148