CIS 192 - Final Exam - Spring 2010 (60 points)   Name _____
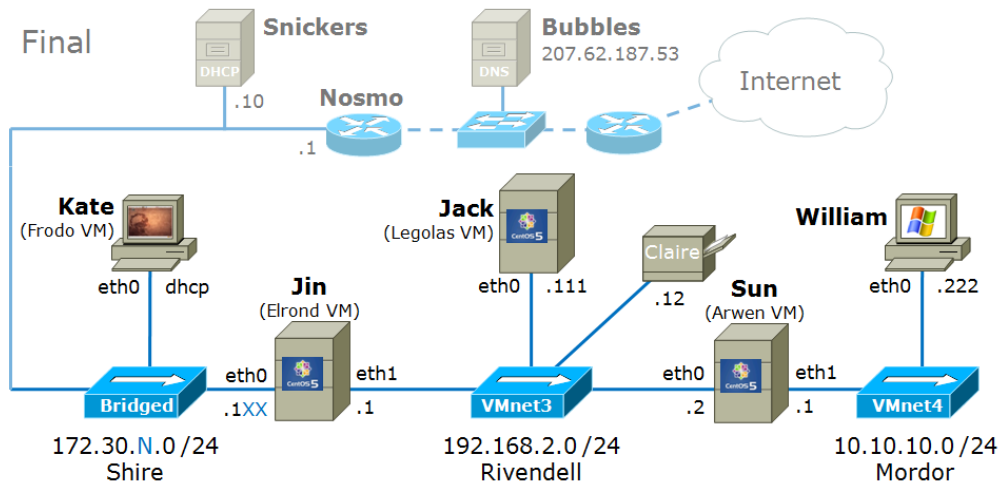
Resources: Open book, computer and Internet. However during the test you may not ask for or get assistance from others.

Demonstrate skills (60 points*)

- Do Task 1 and any other two tasks (20 points each*)
- Do additional tasks for extra credit (6 points each*)
- Make sure your tasks are still working after a system restart.
- All CentOS VMs must have SELinux in enforcing mode.
- You only need to configure the firewall on Jin. The firewalls on the other VMs may be disabled.
- When you finish a task, have the instructor sign off that the task was completed satisfactorily.
- Follow the submittal instructions at the end to submit your work for credit.

Task 1

- ☐ Set the RAM on each VM to 384MB.
- ☐ Cable and configure the systems as shown in the diagram above.
- ☐ Jin's firewall should be the default CentoOS firewall modified to access any of the services below you decide to install.
- ☐ Setup forwarding and static routes so that all VMs can ping each other.
- ☐ Modify the default firewalls on Jin and Sun to allow unlimited packet forwarding.
- ☐ Modify the firewall NAT table on Jin to allow Internet access for all Rivendell and Mordor hosts.
- ☐ Reboot your system to make sure the configuration is persistent.
- ☐ Demonstrate your results to the instructor.
    - Instructor's initials: _____

Task 2

- ☐ Install a DHCP server on Sun to service the Rivendell (192.168.2.0/24) and Mordor (10.10.10.0/24) networks.

- ☐ Your DHCP server should have reservations so that the Jack and William hosts always get the IP address shown on the map above.
- ☐ Provide the following information to DHCP clients:

scope	192.168.2.0/24	10.10.10.0/24
domain	rivendell	mordor
default gateway	192.168.2.1	10.10.10.1
IP range	192.168.150-199	10.10.10.150-199
netmask	255.255.255.0	255.255.255.0
1st name server	192.168.2.1	192.168.2.1
2nd name server	207.62.187.53	207.62.187.53
Time zone	Pacific Daylight Time	Pacific Daylight Time
Default lease time	2 hours	2 hours
Maximum lease time	4 hours	4 hours

- ☐ Configure Jack and William as DHCP clients and force them to get new leases.
- ☐ Make sure you still have end-to-end connectivity between all hosts.
- ☐ Demonstrate your results to the instructor.
    - Instructor's initials: _____

Task 3
- ☐ Configure printing on Sun.
- ☐ Configure CUPS for remote management.
- ☐ Add a "pretend" HP LaserJet 1320N (use a socket connection to 192.168.2.12:9100) named Claire.
- ☐ Make Claire your default printer.
- ☐ Stop the printer so it doesn't print but will still accept jobs (to be spooled).
- ☐ Get a .jpg file from the */home/cis192/depot* on Opus and print it.
- ☐ Print the /etc/printcap file.
- ☐ Configure the firewall to allow connections to the CUPS service.
- ☐ Reboot your system to make sure the configuration is persistent.
- ☐ Demonstrate your results to the instructor
    - Instructor's initials: _____

Task 4
- ☐ Install and configure a Samba server on Sun (workgroup=WORKGROUP).
- ☐ Create a read only share in */var/shares/depot* that only can be accessed only from the Rivendell or Mordor networks.
- ☐ Allow Sun users to remotely access their home directories with read/write access.
- ☐ Copy the *.txt files from the Opus /home/cis192/depot to populate your depot share.
- ☐ Set contexts so your share is available under SELinux enforcing mode.
- ☐ Reboot to make sure you are still sharing after a system restart.
- ☐ Demonstrate your results to the instructor.
    - Instructor's initials: _____

Task 5
- ☐ Install an Apache web server on Jin.
- ☐ Configure user directories so every user can publish from their public_html directory.
- ☐ Create users Arwen and Elrond.
- ☐ Publish a custom web page from Arwen and Elrond's public_html directories.

☐ Open the firewall to allow new connections to your web server.
☐ Set contexts to allow publishing under SELinux enforcing mode.
☐ Reboot to make sure you are still publishing after a system restart.
☐ Demonstrate your results to the instructor.
- Instructor's initials: _____

Task 6

☐ Install an vsftpd FTP server with a custom banner on Jin
☐ Allow anonymous access to files in /var/ftp/pub with SELinux set to enforcing mode
☐ Make sure you can retrieve files on Jin from Kate and Jack in either active or passive mode
☐ Configure the firewall to allow incoming FTP connections.
☐ Set contexts to allow FTP access under SELinux enforcing mode
☐ Reboot to make sure your FTP server is still working after a system restart
☐ Demonstrate your results to the instructor
- Instructor's initials: _____

Task 7

☐ Install and configure DNS server on Jin for *Rivendell* and *Mordor* domains
☐ Add A and PTR records for *Rivendell* and *Mordor* VMs shown in the diagram
☐ Configure *Rivendell* and *Mordor* VMs to use Jin as their DNS server.
☐ Configure the firewall to allow incoming DNS connections.
☐ Reboot to make sure your DNS server is still working after a system restart
☐ Demonstrate your results to the instructor
- Instructor's initials: _____

Task 8

☐ Install and configure Sun as a NIS server for the NIS domain *island*
☐ Configure Jack as a NIS client for the same domain
☐ Configure domain users Hugo and Libby that can login into either Jack or Sun
☐ Use NFS to export the home directory on Sun
☐ Hugo and Libby should not be in the /etc/passwd file on Jack
☐ On Jack, mount the exported home directory on Sun on the local home directory so Hugo and Libby can access their Sun home directories.
☐ Hugo and Libby should be able to change their password using yppasswd
☐ Reboot to make sure your NIS server is still working after a system restart
☐ Demonstrate your results to the instructor
- Instructor's initials: _____

When finished, be sure and submit your work using the instructions on the next page

Submittal

*You must document your work to get credit. Download the *show-network-centos* script from the */home/cis192/scripts* directory on Opus to each of the CentOS VMs (Jin, Sun and Jack).

- ☐ On each CentOS VM, modify this script at the top with your *logname* and *station number*
- ☐ On each CentOS VM, run the script which produces a file named *final*.*hostname*.*logname*
- ☐ Submit the three *final.hostname*.*logname* files to Opus using:

  ```
  scp final* cis192@opus.cabrillo.edu:
  ```
  (for Jin, Sun and and Jack)

  - • Instructor's initials: _____