

Submit SRT210 A1 Submit Date: _____

Student Full Name: _____

MySeneca Username: _____

Student ID: _____

asg1 subnet: 192.168._____.0/24

MAC and IP of eth0 on **lin1a1:** _____

MAC and IP of eth1 on **lin1a1:** _____

MAC and IP of eth0 on **lin1a2:** _____

MAC and IP of eth0 on **lin1:** _____

MAC and IP of eth0 on **lin2:** _____

Demo:

1. Do a reboot of each VM during the demo and show the results working as expected. At no time during the demo do you need to reboot **c7host**.
2. Do each of the test cases (see **A1 Test Cases** section below) during the demo. Be prepared for any questions that might be asked of you during the demo. Also should you be asked to modify your configuration according to the question being asked you should be prepared to do so.

Report:

Write a report where you describe in your own words your learning experience of this assignment. Keep the tone of your writing such that your present self is teaching your future self (who might have forgotten) the learning experience you achieved while doing this assignment. Be sure to include all the major learning points you overcame to make this assignment work as described.

1. The report must be in a PDF format otherwise it will be considered unreadable. The text part of the report can use a Serif or Sans-Serif font (such as Arial or DejaVu Sans) but the configuration file output must be in a fixed-width (such as Courier or MonoType).

2. The very FIRST FEW LINES MUST CONTAIN: **Full Name**, your **MySeneca username**, and your **student ID**.
3. The next FEW LINES MUST CONTAIN output from the command line (use a screen shots for doing this) showing:
 - MAC and IP address of eth0 on **lin1a1**
 - MAC and IP address of eth1 on **lin1a1**
 - MAC and IP address of eth0 on **lin1a2**
 - MAC and IP address of eth0 on **lin1:**
 - MAC and IP address of eth0 on **lin2:**
4. What you had to do to set everything up (most important are the networking, routing, and firewall configurations). Screenshots of the configuration files are acceptable, however, the screenshot must be readable. If the font is too small (less than 12 pt) or the screenshot is blurry, you will lose marks. You may take multiple screenshots of a long configuration file provided they show the previous few lines to show continuation. Ideally, it is best (and probably fastest) to use scp to get the configurations out of the VMs and append them into your report.
5. Describe any challenges you ran into and how you solved them.
6. Screenshots are required for proof that your setup works. Each screenshot must:
 - Clearly be labelled the test you are proving, for example: Connect to `http://lin1a2.yourr` from **c7host**.
 - Cover **ALL** of the individual test cases described in **A1 Test Case** section below.
 - Show the interaction between **c7host** (or **lin2**) in a readable (12 pt) font.
 - The prompt on the terminal **MUST** show the logged in user and hostname of the VM so it captures what is happening where.
 - Use `curl` and `ping` to show connections to each server and the web. Pipe the output from `curl` into `head` to restrict output to 4 lines maximum.
 - Use `cat` show contents of `/etc/resolv.conf` on **lin1a1** and **lin2a1**.
 - Use `cat` to show the contents of `/etc/sysconfig/iptables` on **lin1a1**, and **lin2a1**. Show all the additional commands you ran on **c7host** after it booted up to test connectivity to Apache on **lin1**, NGINX on **lin1a1**, and Caddy on **lin2a1**.
 - Use `cat` to show full configuration of these network cards:
 - eth0 on **lin1a1**
 - eth1 on **lin1a1**
 - eth0 on **lin2a1**
7. Show the output of each of the Assignment 1 test cases (see the next section) in your report.

A1 Test Cases:

1. Using `ping 1.1.1.1`, `ssh root@hostname`, and `curl http://centos.org` show the following use cases:
 - a. From **lin1a1**: prove Internet connectivity of **lin1a1** b. From **lin2a1**: prove **lin1a1** acts as a router for **lin2a1** and acts as a bridge between **asg1** and **network1** using the following 3 test cases.
 - (a) when **lin1a1** is shut down **lin2a1** no longer has Internet connectivity
 - (b) when **lin1a1** is turned on **lin2a1** has Internet connectivity
 - (c) use `ping` and `ssh` from **lin2a1** to connect to **lin1** and *lin2
 - c. From **c7host**:
 - (a) use `ping` and `ssh` to prove connectivity to **lin1a1** and **lin2a1** using their IP numbers and their domain names. The domain names for both **lin1a1** and **lin2a1** should be resolved through **lin2**.
 - (b) use `curl` to display the home pages of Apache running on **lin1**; NGINX running on **lin1a1**, and Caddy running on **lin2a1**. Use both IP and friendly-names methods to demonstrate this: IP addresses of their respective hosts and the domain names of those respective hosts, for example **yourMySeneca.host.ops**. and 192.168.X.33
2. From Windows, using Internet Explorer or Edge, show home page contents of your website on that host using the webserver installed on that host, example: Apache on **lin1**, NGINX on **lin1a1**, and Caddy on **lin2a1**. You may have to edit iptables rules on **c7host** each time you want to access that particular VM so HTTP requests coming from port 80 on Windows go directly to that VM.

Comments: