ASSIGNMENT 0.5

NES 470, Fall 2023, Dr. Ahmad T. Al-Hammouri

Due date: Wednesday 18/10/2023 at 11:55pm.

Objectives:
To deploy and set up the Cisco CSR 1000v virtual router, and perform simple network management tasks.

Problem Statement:
In this assignment, you will deploy a special virtual machine: the Cisco CSR 1000v virtual router into the VMware virtualization software.

We will be experimenting with CSR 1000v throughout the semester.

Perform the following steps:

1. Install VMware Workstation 17 Player.

2. Download the CSR 1000v **virtual appliance** (compressed archive) using the following link
   `https://bit.ly/3ZTnZod`

3. After decompressing the file, import the router appliance into VMware Workstation Player as follows

   - In VMware Workstation Player main window, click 'Open a Virtual Machine'.
   - Browse to the directory where you decompressed the file in the previous step.
   - Select the 'CSR1000v.vmx' file, and click 'Open'.

4. Start the router by clicking 'Play virtual machine' from the main VMware Workstation Player window.

5. If you receive a warning/information window asking whether the virtual machine was moved or copied, click 'I Copied It'.

6. Booting up the CSR 1000v takes about 3–4 minutes until it fully completes. Be patient! During the process, you will see several informative or warning messages.

7. You finally need to hit the Enter key to get the command prompt 'nes470>'.

8. **List** the network interfaces of the router with their IP address information. **There must be <u>four</u> network interfaces with three of them are successfully assigned IP addresses**.

9. From a Linux or a Windows machine, login into the router's Web management interface accessed via `https://"your CSR 1000v router's IP address"`. Use the login username 'nes470user' and password 'nes470passwd' (both without quotes).

10. Navigate to Configuration → Interface → Logical → Loopback.

11. Create and configure the router interfaces to look **exactly** like the following snapshot— **except** for the IP addresses of the interfaces GigabitEthernet2 and GigabitEthernet3 whose IP addresses are assigned automatically by DHCP.

	Ports			
Q Search Menu Items				
	Port Name ⌄	**Description** ⌄	**Status** ⌄	**VLAN/IP**
Dashboard	GigabitEthernet1		⬇	Unassigned
	GigabitEthernet2		⬆	192.168.1.68
Monitoring >	GigabitEthernet3		⬆	192.168.88.132
	GigabitEthernet4		⬆	Unassigned
Configuration >	Loopback1	Loopback #1	⬆	1.1.1.1
	Loopback2	Loopback #2	⬇	2.2.2.2

12. From a **Linux** machine, login onto the CSR 1000v via SSH. Use the same login information you used to access the Web management interface.

13. **List** the network interfaces of the router with their IP address information using the SSH session.

Notes:

- The Linux operating system can be another virtual machine running on the same host, the host operating system itself, or a Linux machine running on another machine.

- The CSR 1000v virtual machine needs minimum memory of 3GB, the host operating system (Windows 10) needs minimum memory of 4GB, and some Linux flavors can run with 1GB of memory. Observe your computer memory usage. Be cognizant!

Deliverables:

- On a Word document, provide **TWO** screenshots: the command and its outputs of Step 8 above, and the command and its output of Step 13 above.

- Covert the Word file into PDF, and name the file as follows `ID-xxxxxx.pdf`, where 'xxxxxx' is your student ID.

- Submit the PDF file to the `elearning` via the provided link. Do **NOT** send it via e-mail or a message from within the `elearning` even before the deadline because it will be deleted tacitly.

- This is an **individual** assignment so every student must perform it alone and submit his/her own file.