Princess Sumaya University for Technology
King Abdullah II School for Electrical Engineering

22449 Computer Networks Lab
Final Project
Second Semester 2023/2024
20 Marks
Due date:12/05/2024

In this Lab project you are going to apply the knowledge you have learnt within this Lab course.

You have to submit a packet tracer file of your work, a full report that clearly explains all your work and results in addition you will present your work in front of your instructor.

In this project you are asked to do the following:

Build a topology that consists of the following:

1. 3 Routers: ISR4331
2. 3 switches: 2960 IOS15
3. 11 PCs and 1 Server

The topology should meet the following requirements:

Physical connections:

1. Router R0 connected to router R1 and R1 is connected to router R2.
2. The routers R0, R1, and R2 connected to the switches S0, S1, and S2 respectively.
3. S0 is connecting four PCs PC0, PC1, PC2, and PC3
4. S1 is connecting PC4 and PC5
5. S2 is connecting PC6-10 as well as a Server SRV0
6. Use the serial links between the routers only, otherwise use the straight-through cables.

Logical configurations:

1. PC0 and PC1 should be in the same VLAN with ID 90 and name of Sales.
2. PC2 and PC3 should be in the same VLAN with ID 80 and name of HR.
3. PC4 and PC5 should be in the same VLAN with ID 60 and name of Accountant.
4. PCs 6-10 in VLAN 3
5. Server SRV0 in VLAN 2
6. Configure the IP addresses for the routers, PCs and server as shown in the addressing table below.
7. Configure the required Vlans, access and trunk ports on the switches.
8. Configure Router 0 as DHCP server for Vlan 80 and 90.
9. Configure the EIGRP routing protocol so all Pcs can reach each other's (except the two private LANs)
10. Configure hostnames for all the routers and switches with your names.
11. Configure psut as enable, console, VTY password on all devices.

Router 0	G0/0/0.90 G0/0/0.80	90.0.0.1 80.0.0.1
Router 0	S0/1/0	202.0.0.1
Router 1	S0/1/0	202.0.0.2
Router 1	S0/1/1	206.0.0.1
Router 1	G0/0/0 G0/0/0.60	20.0.0.1 60.0.0.1
Router 2	S0/1/1	206.0.0.2
Router 2 (private networks)	G0/0/0 G0/0/0.3	192.168.20.1 192.168.3.1
Switch 1	Interface Vlan 1	20.0.0.5
PC0	Fa0	DHCP
PC1	Fa0	DHCP
PC2	Fa0	DHCP
PC3	Fa0	DHCP
PC4	Fa0	60.0.0.10
PC5	Fa0	60.0.0.11
PC6-PC10	Fa0	192.168.3.2 – 192.168.3.6
SRV0	Fa0	192.168.20.10

12. Switch 1 should be accessible for remote configuration from any other VLANs (using Telnet or SSH)

13. Server's network (192.168.20.0) should be private (not advertised in EIGRP) and Static Nat should be used to reach the server using the public IP of S0/1/1 of R2.

14. PC6 to PC10 are using PAT to communicate simultaneously with other networks with the public IP 172.40.0.3

15. Configure a numbered access control list to **deny** PC5 to access Vlan 90.

16. Configure a named access control list (CCCHTTP) to deny PC4 from accessing HTTP/HTTPs service from the server. (note that PC4 can ping the server).