Term Project

Topics covered:

- Variable Length Subnetting Mask (VLSM)
- Finite Length Subnetting Mask (FLSM)
- Dynamic Host Configuration Protocol (DHCP)
- Routing Information Protocol (RIP)
- Open Shortest Path First (OSPF)
- Virtual Local Area Network (VLAN)
- Network Address Translation (NAT)

Statement:

Given below is an incomplete network design. Basic network documentation is done for the network. Your task is to use the concepts you have learned so far in your lab and complete this network.

Topology to implement:

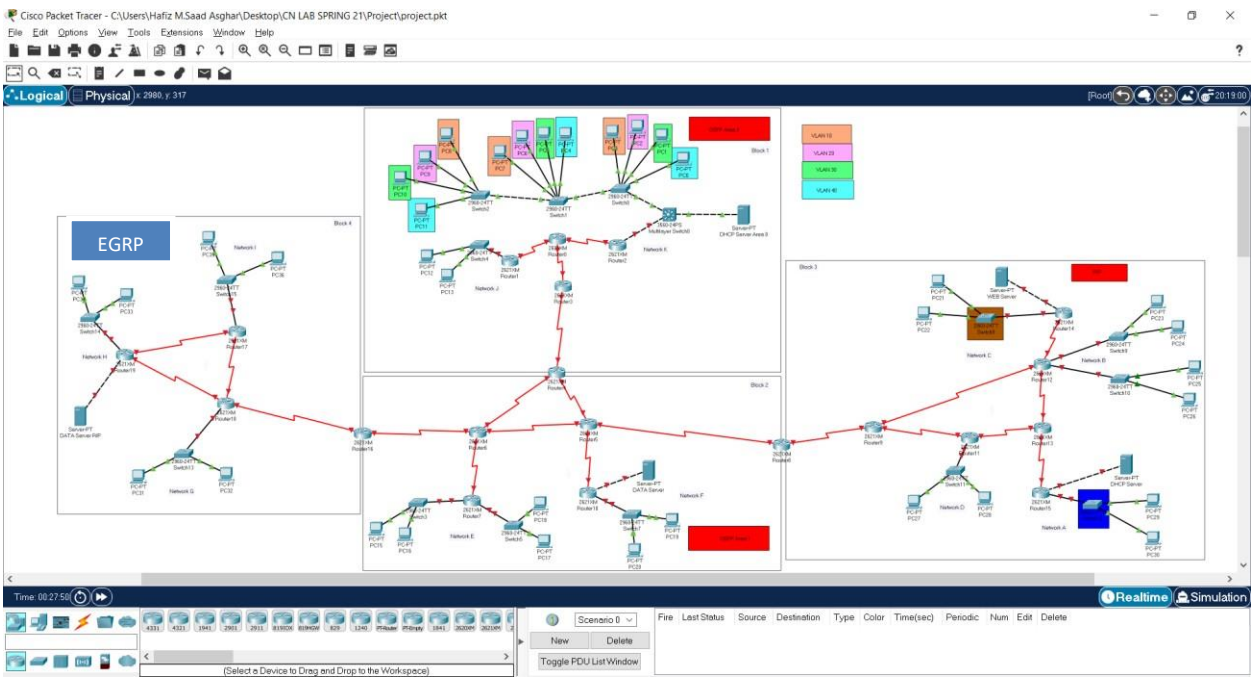

Figure 1: Topology of Network

Project Instructions:

Following are the steps You need to perform in the network:

i. Use RIP in Block 3 for Routing, OSPF with Area 0 block 1 and EGRP in block 4 as mentioned in the Topology.

ii. You should use VLSM in each of the 4 Blocks in the given topology. One Network address for each Block.

iii. Please find the Number of required host per subnet in the table below and DO VLSM accordingly.

iv. All host in EIGRP, and RIP will get IP address from "DHCP Server" and Host in OSPF area 0 will get IP address from " DHCP Server for VLAN's ".

v. Use Redistribution on Router8 and Router16 for connecting OSPF with RIP and OSPF with EGRP.

vi. You should implement NAT in router with the Network F by using private address.

vii. Calculate networks within two routers in whole topology then use One IP Address and perform FLSM to communicate.

viii. Create VLAN's as mentioned in scenario.

ix. PC 9 will not access WEB server, all host connected with Dark Blue shaded switch will not access "Data Sever RIP", Host with Brown shaded switch will not communicate with Host of "VLAN 20".

x. VLAN's hosts must communicate with each Host in Same VLAN. Use Inter-VLAN communication between VLAN 10 and VLAN 20 Only.

xi. Use VTP and make 3560 switch a server other will be client and switch with light blue shade shouldn't copy any VLAN. 3560 switch is Multi-Level Switch which can act as a switch as well as router.

Note:

- Clearly mention which IP address you use for VLSM in which block.
- Clearly mention which IP address you use for FLSM.
- Clearly mention which Private IP address you use for NAT.
- Properly show your subnetting work.

Important

- Nicely modeled topology is required to make itself explanatory.
- Your project's physical workspace must depict your network topology embedded in a real-world environment.
- You may use nice background images cities, buildings, offices to make its physical view more eye-catching.

Instructions:

- You may make a group of **3 people** for this project. Groups cannot be changed once submitted.

- Evaluation of the project will be individual based and not group based. Therefore, every member of the group must put equal efforts into it.

- The required project is to be done on **Cisco Packet Tracer**.

- Late Submissions will **not be accepted.**

"Our greatest weakness lies in giving up. The most certain way to succeed always to try just one more time."

☺☺ Good luck! ☺ ☺