Redes de Computadores - RECOMP

RIP – OSPF – EIGRP

Lab Topology:

The lab network topology is illustrated below:

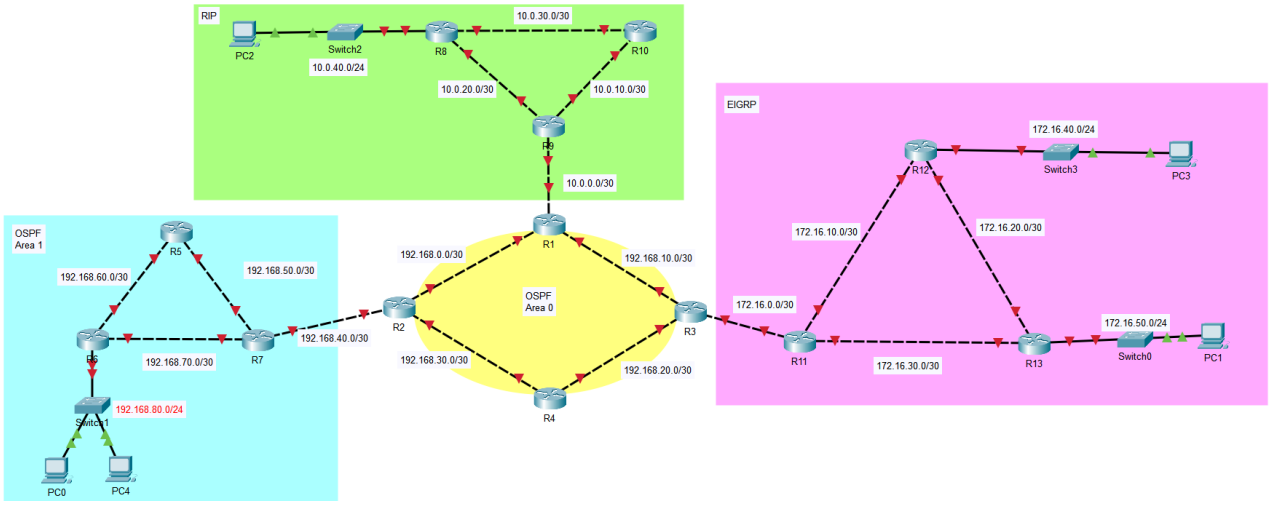

Figure 1- Lab Topology

Background

In this activity, you will implement the redistribution of three routing protocols RIP, EIGRP, OSPF.

Objectives

Part 1: Configure routers' names and active interfaces.

Part 2: Configure RIP.

Part 3: Configure EIGRP.

Part 4: Configure OSPF.

Part 5: Configure Redistribution.

Part 6: Verify the Connection between PCs.

Table 1 - Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	Gig0/0	192.168.0.1	255.255.255.252	N/A
	Gig0/1	192.168.10.1	255.255.255.252	N/A
	Gig0/2	10.0.0.1	255.255.255.252	N/A
R2	Gig0/0	192.168.0.2	255.255.255.252	N/A
	Gig0/1	192.168.30.1	255.255.255.252	N/A
	Gig0/2	192.168.40.1	255.255.255.252	N/A
R3	Gig0/0	192.168.10.2	255.255.255.252	N/A
	Gig0/1	192.168.20.1	255.255.255.252	N/A
	Gig0/2	172.16.0.1	255.255.255.252	N/A
R4	Gig0/0	192.168.30.2	255.255.255.252	N/A
	Gig0/1	192.168.20.2	255.255.255.252	N/A
R5	Gig0/0	192.168.60.1	255.255.255.252	N/A
	Gig0/1	192.168.50.1	255.255.255.252	N/A
R6	Gig0/0	192.168.60.2	255.255.255.252	N/A
	Gig0/1	192.168.70.1	255.255.255.252	N/A
	Gig0/2	192.168.80.1	255.255.255.0	N/A
R7	Gig0/0	192.168.50.2	255.255.255.252	N/A
	Gig0/1	192.168.70.2	255.255.255.252	N/A
	Gig0/2	192.168.40.2	255.255.255.252	N/A
R8	Gig0/0	10.0.20.1	255.255.255.252	N/A
	Gig0/1	10.0.30.1	255.255.255.252	N/A
	Gig0/2	10.0.40.1	255.255.255.0	N/A
R9	Gig0/0	10.0.20.2	255.255.255.252	N/A
	Gig0/1	10.0.10.1	255.255.255.252	N/A
	Gig0/2	10.0.0.2	255.255.255.252	N/A
R10	Gig0/0	10.0.10.2	255.255.255.252	N/A
	Gig0/1	10.0.30.2	255.255.255.252	N/A
R11	Gig0/0	172.16.10.1	255.255.255.252	N/A
	Gig0/1	172.16.30.1	255.255.255.252	N/A
	Gig0/2	172.16.0.2	255.255.255.252	N/A
R12	Gig0/0	172.16.10.2	255.255.255.252	N/A
	Gig0/1	172.16.20.1	255.255.255.252	N/A
	Gig0/2	172.16.40.1	255.255.255.0	N/A
R13	Gig0/0	172.16.20.2	255.255.255.252	N/A
	Gig0/1	172.16.30.2	255.255.255.252	N/A
	Gig0/2	172.16.50.1	255.255.255.0	N/A
PC1	NIC	192.168.80.2	255.255.255.0	192.168.80.1
PC2	NIC	192.168.80.3	255.255.255.0	192.168.80.1
PC3	NIC	10.0.40.2	255.255.255.0	10.0.40.1
PC4	NIC	172.16.40.2	255.255.255.0	172.16.40.1
PC5	NIC	172.16.50.2	255.255.255.0	172.16.50.1

Part 1: Configure routers' names and active interfaces.

Step 1: Configure routers' names.

Step 2: Configure router IPs.

a) Configure the routes IPs according to Table 1.

Step 2: Configure PCs IPs.

a) Configure the PCs IPs and default router according to Table 1.

Part 2: Configure RIP.

Part 2: Configure EIGRP

Step 1: Enable the EIGRP routing process.

a) Enable the EIGRP routing process on each router using AS number 1.

Step 2: Advertise directly connected networks.

a) Use the show ip route command to display the directly connected networks on each router.
b) On each router, configure EIGRP to advertise the specific directly connected subnets.

Part 4: Configure OSPF.

Step 1: Set up OSPF areas 0 and 1.

a) Attribute router-ids to each router in the OSFP areas for example: R1 → router-id= 1.1.1.1

Step 2: Advertise directly connected networks.

a) Use the show ip route command to display the directly connected networks on each router.
b) On each router, configure OSPF to advertise the specific directly connected subnets.

Part 5: Configure Redistribution.

Step 1: Configure the redistribution between all areas.

a) For OSPF redistribution use:

100000 (transmission rate in kbps) – 100 Mbps
100 (network delay in 10 microseconds units) – 1 millisecond
255 (reliability from 0 up to 255) – 100%
1 (network load from 1 up to 255) – 0 %
1500 (MTU value in bytes) – 1500 bytes

Part 6: Verify the Connection between PCs.