COMPUTER NETWORKSLAB SEVEN REPORT

DONE BY – NIKASH.P (RA2211003050156)

B. TECH COMPUTER SCIENCE AND ENGINEERING (SEC(FROM SRM INSTITUTE OF SCIENCE AND TECHNOLOGY -C 3RD YEAR, 5TH SEMESTER)   – TRICHY)

Lab 7: Configure RIP Version 1 (RIPv1) on Cisco Packet Tracer

Objective:

This lab focuses on configuring Routing Information Protocol (RIP) Version 1 (RIPv1) on a router to allow dynamic routing between multiple devices. RIP helps routers exchange routing table information, enabling them to adapt to changes in the network topology.

Network Design:

1. **Devices**:

   o 2 Router 1941 o 2 Cisco Switch 2960 o 4 PC-PT

2. **Network Topology**:

   o **Router 1 (R1)** connected to **Switch 1 (SW1)** o **Router 2 (R2)** connected to **Switch 2 (SW2)** o **PC1** and **PC2** connected to **SW1** o **PC3** and **PC4** connected to **SW2** o **R1** and **R2** connected via a **Serial DCE-DTE cable**

Procedure:

Step 1: Configure Network Addresses

- **PC1**: 192.168.10.1 (Subnet Mask: 255.255.255.0)

- **PC2**: 192.168.10.2 (Subnet Mask: 255.255.255.0)

- **PC3**: 192.168.20.1 (Subnet Mask: 255.255.255.0)

- **PC4**: 192.168.20.2 (Subnet Mask: 255.255.255.0)

- **R1** Serial Interface: 10.0.0.1 (Subnet Mask: 255.255.255.252)

- **R2** Serial Interface: 10.0.0.2 (Subnet Mask: 255.255.255.252)

Step 2: Configure the Routers

1. **Access Router R1 CLI**:
   - Press **Enter** to start. o   Type enable to activate
     privileged mode.
   - Type config t to enter global configuration mode.

2. **Configure R1 Interfaces**:
   - Configure the **Serial 0/0/0** interface: interface Serial0/0/0 ip
     address 10.0.0.1 255.255.255.252 no shutdown
   - Configure the **GigabitEthernet 0/0** interface connected to
     SW1:

           interface GigabitEthernet0/0 ip
           address 192.168.10.1 255.255.255.0
           no shutdown

3. **Access Router R2 CLI**:

- Press **Enter** to start.
- Type enable to activate privileged mode.
- Type config t to enter global configuration mode.

4. **Configure R2 Interfaces**: Configure

   the **Serial 0/0/0** interface: interface

   Serial0/0/0 ip address 10.0.0.2

   255.255.255.252 no shutdown

   Configure the **GigabitEthernet 0/0** interface connected to

   SW2: interface GigabitEthernet0/0 ip address 192.168.20.1

   255.255.255.0 no shutdown

Step 3: Configure RIP on the Routers

1. **Configuring RIP on R1**:
   - Enter global configuration mode and enable RIP:
     config t router rip

     version 1 network

     192.168.10.0

     network 10.0.0.0

Configuring RIP on R2:

- Enter global configuration mode and enable RIP:

config t router rip

version 1 network

192.168.20.0 network

10.0.0.0 **Step 4:**

Configuring PCs

1. **PC1 Configuration**:
   - Go to the **desktop** of PC1, select **IP Configuration**, and assign:
     - IP Address: 192.168.10.1
     - Subnet Mask: 255.255.255.0 ▪ Default Gateway: 192.168.10.1
2. **PC2 Configuration**:
   - IP Address: 192.168.10.2 ○ Subnet Mask: 255.255.255.0 ○ Default Gateway: 192.168.10.1
3. **PC3 Configuration**:
   - IP Address: 192.168.20.1 ○ Subnet Mask: 255.255.255.0 ○ Default Gateway: 192.168.20.1
4. **PC4 Configuration**:
   - IP Address: 192.168.20.2

   - Subnet Mask: 255.255.255.0 ○ Default Gateway: 192.168.20.1

Step 5: Verify Configuration

1. **Ping Between PCs**:
   - On **PC1**, open the command prompt and type ping 192.168.20.1. You should receive successful responses.
   - Similarly, ping between **PC2** and **PC3** to verify end-to-end connectivity.
2. **Check RIP Routing Tables**:
   - On **R1 CLI**, type show ip route to verify that the routes learned via RIP are visible in the routing table.

Step 6: Save the Configuration 1.

Save the router configuration:

copy running-config startup-config

Conclusion:

By completing this lab, we successfully configured RIP Version 1 on two routers, enabling dynamic routing between two LANs. The routers shared their routing tables, allowing PCs from one network to communicate with PCs from another network.

Screenshot: