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Practical 11

AIM:

b)Simulate RIP using CISCO Packet Tracer

**Step-by-Step RIP Configuration Guide**

1. **Initial IP Configuration for Devices**

| **Device** | **Interface** | **IP Address** | **Connected to** |
| --- | --- | --- | --- |
| PC0 | Fast Ethernet | 10.0.0.2/8 | Router0’s Fa0/1 |
| Router0 | Fa0/1 | 10.0.0.1/8 | PC0’s Fast Ethernet |
| Router0 | S0/0/0 | 192.168.1.249/30 | Router1’s S0/0/0 |
| Router0 | S0/0/1 | 192.168.1.254/30 | Router2’s S0/0/1 |
| Router1 | S0/0/0 | 192.168.1.250/30 | Router0’s S0/0/0 |
| Router1 | S0/0/1 | 192.168.1.246/30 | Router2’s S0/0/0 |
| Router2 | S0/0/0 | 192.168.1.245/30 | Router1’s S0/0/1 |
| Router2 | S0/0/1 | 192.168.1.253/30 | Router0’s S0/0/1 |
| Router2 | Fa0/1 | 20.0.0.1/8 | PC1’s Fast Ethernet |
| PC1 | Fast Ethernet | 20.0.0.2/8 | Router2’s Fa0/1 |

1. **Assign IP Addresses to Devices**
   * Configure each device’s IP through Packet Tracer:
     + **For PCs:** Access the PC’s IP Configuration and assign the IPs as listed above.
     + **For Routers:** Access CLI, enter global configuration mode, and assign IPs to each interface.
2. **Enable and Configure Interfaces on Routers**
   * Use the following commands to set up each router interface.

Example for Router0:

Router> enable

Router# configure terminal

Router(config)# interface fastEthernet 0/1

Router(config-if)# ip address 10.0.0.1 255.0.0.0

Router(config-if)# no shutdown

Router(config-if)# exit

Router(config)# interface serial 0/0/0

Router(config-if)# ip address 192.168.1.249 255.255.255.252

Router(config-if)# clock rate 64000

Router(config-if)# bandwidth 64

Router(config-if)# no shutdown

Repeat similar steps for Router1 and Router2, adjusting IP addresses as per their configuration.

1. **Configuring RIP on Routers**
   * RIP setup involves:
     + Enabling RIP
     + Adding directly connected networks to the RIP advertisement.

Configuration for **Router0**:

Router(config)# router rip

Router(config-router)# network 10.0.0.0

Router(config-router)# network 192.168.1.248

Router(config-router)# network 192.168.1.252

Configuration for **Router1**:

Router(config)# router rip

Router(config-router)# network 192.168.1.244

Router(config-router)# network 192.168.1.248

Configuration for **Router2**:

Router(config)# router rip

Router(config-router)# network 20.0.0.0

Router(config-router)# network 192.168.1.244

Router(config-router)# network 192.168.1.252

1. **Verification**
   * Use the ping command on PC1 to test connectivity to PC0.
   * Use the tracert command to trace the path and verify which route is used by RIP.
2. **Testing Redundancy**
   * Simulate a route failure by disconnecting the cable between Router0 and Router2 on their serial interfaces.
   * Use tracert again to see RIP redirecting traffic through an alternate route (via Router1).

OUTPUT:

