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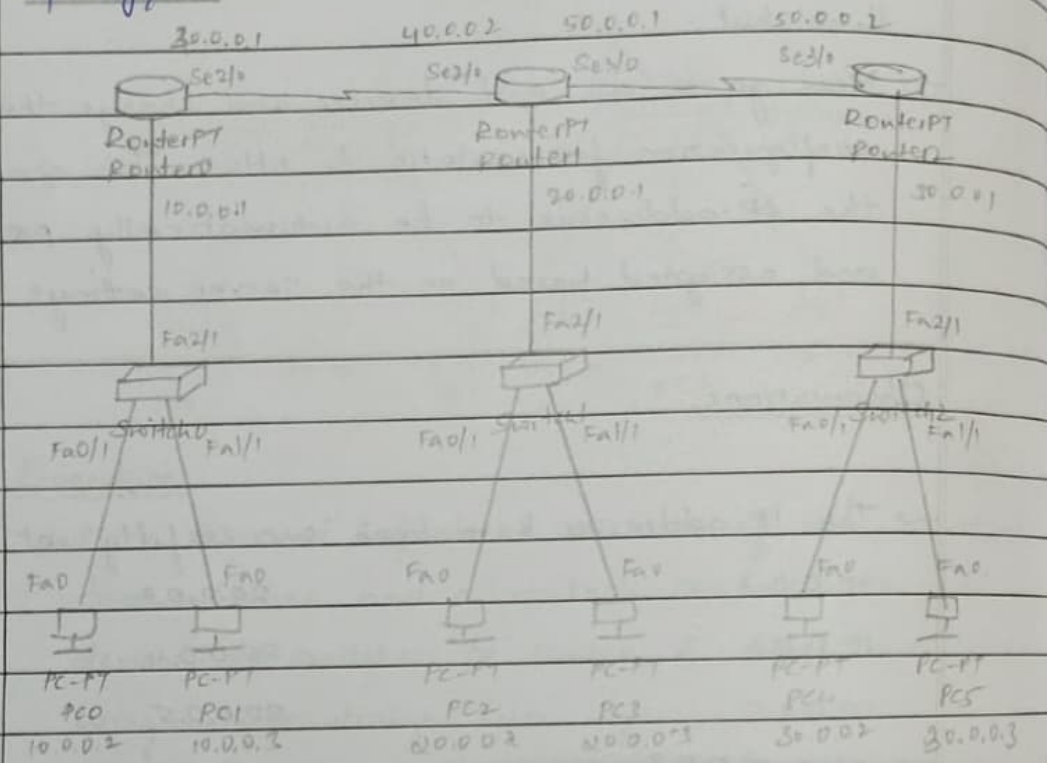
LAB-06

01. **Objective:**

Configure routing information protocol in routers

Topology:



Procedure:

→ Place 6 end devices, 3 switches and 3 routers.

→ Connect 2 end devices to each switch and switches to each router using copper straight wire.

→ Connect R0 to R1 and R1 to R2 using serial wire.

→ Set the IP addresses of the end devices and their gateways as shown in figure.

→ Now go to each router and configure them.

→ For router 0, do:

>enable

#config terminal

#interface fa0/0

ip address 10.0.0.1 255.0.0.0
no shut
exit
interface serial 2/0
ip address 40.0.0.1 255.0.0.0
no shut
exit

→ For router1, do:

>enable
config terminal
interface serial 2/0
ip address 40.0.0.2 255.0.0.0
no shut
exit
interface fa 0/0
ip address 20.0.0.1 255.0.0.0
no shut
exit
interface serial 3/0
ip address 50.0.0.1 255.0.0.0
no shut
exit

→ For router 2, do:

>enable
config terminal
interface serial 2/0
ip address 50.0.0.2 255.0.0.0
no shut
exit
interface fa0/0
ip address 30.0.0.1 255.0.0.0
no shut
exit

router rip
network 10.0.0.0
network 40.0.0.0

router rip
network 40.0.0.0
network 20.0.0.0
network 50.0.0.0

router rip
network 50.0.0.0
network 30.0.0.0

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Observation:

→ Before the setup of the RIP, ping messages were not successful.

→ It was observed that the configuration setup using the Routing Information Protocol enabled in successful communication across the network.

> ping 10.0.0.3

pinging 10.0.0.3 with 32 bytes of data:

Ping statistics for 10.0.0.3:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss)

Approximate round trip times in milli seconds:

Minimum = 0ms, Maximum = 2ms, Average = 1ms

> ping 20.0.0.2

Ping statistics for 20.0.0.2:

Packets: Sent = 4, Received = 3, Lost = 1 (25% Loss)

Approximate round trip times in milli-seconds:

Minimum = 1ms, Maximum = 5ms, Average = 3ms.

> ping 30.0.0.2

Ping statistics for 30.0.0.2:

Packets: Sent = 4, Received = 3, Lost = 1 (25% Loss)

Approximate round trip times in milli-seconds:

Minimum = 6ms, Maximum = 8ms, Average = 6ms

02. Objective:

Demonstrate the TTL or Life of a packet.

Procedure:

→ Add a simple PDU across the PCs of different networks.

→ Consider PC0 to PC5.

Observation:

→ While Auto Capture and observing the TTL across each PC, it was observed as follows:

PDU information at Device: PC1 TTL: 255

PDU information at Device: Router1 TTL: 254

PDU information at Device: Router2 TTL: 253

→ Cisco Packet Tracer has the maximum TTL as 255.

→ It is observed that the TTL decrements as the message is being passed step by step (router to router)

→ The figure of osi model of switch demonstrates flow of packets in 2 layers while 3 layers in the router.

→ The TTL reaches zero once all the packets are received.

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