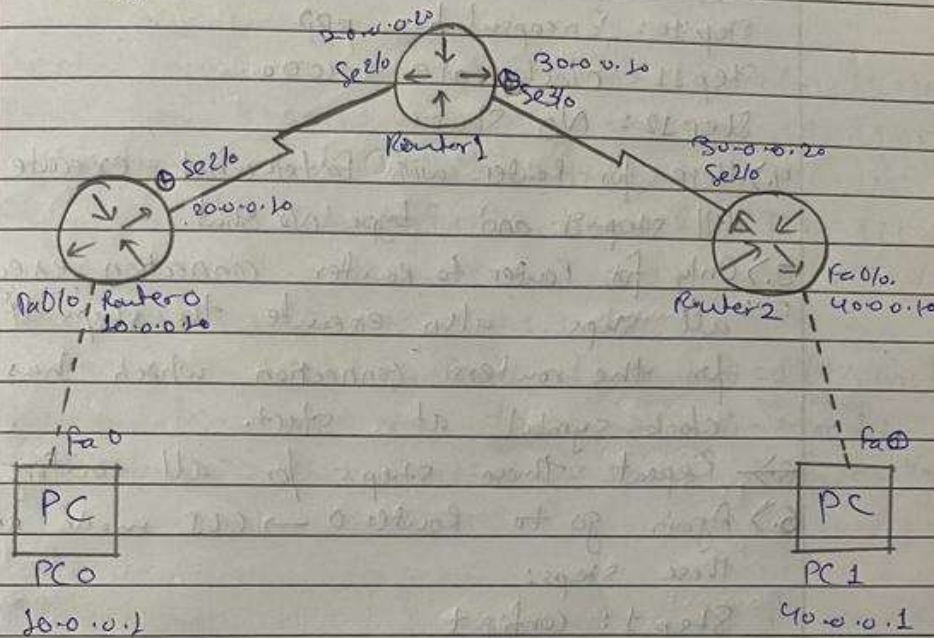


Experiment: 6

Aim: Configure RIP routing Protocol in Routers.

Topology:



Procedure

- 1.) Create a Network using 3 routers and 2 PCs. Connect routers using serial DCE cable and PC to router using copper - crossover cable.
- 2.) Set the IP address gateway for both PCs as IP: 10.0.0.1, Gateway: 10.0.0.10 for PC0 and IP: 40.0.0.1, Gateway: 40.0.0.10 for PC1.
- 3.) Go to router → CLI mode and execute the following commands:
 - Step 1: No
 - Step 2: Enable
 - Step 3: config t
 - Step 4: Interface fastethernet 0/0.

Step 5: IP address 10.0.0.10 255.0.0.0

Step 6: No shut

Step 7: Exit

Step 8: Interface serial 2/0

Step 9: IP address 20.0.0.10 255.0.0.0

Step 10: Encapsulation ppp

Step 11: clock rate 64000

Step 12: No Shut

4.) Here for Router with FastEthernet execute only till step 9 and type No shut.

5.) Only for Router to Router connection execute all steps. also execute the steps 11 only for the routers connection which has a clock symbol at start.

6.) Repeat these steps for all routers.

6.) Again go to Router 0 → CLI mode and type these steps:

Step 1: config t

Step 2: router rip

Step 3: Network 30.0.0.0

Step 4: Network 40.0.0.0

Step 5: Exit.

7.) Repeat these steps for all routers respectively.

8.) At last now go to each router and type show IP route. Here the IP addresses associated with that router will be labelled as 'C' and other IP addresses and labelled as 'R'.

9.) lastly go to PC0 and ping a message to PC1 using ping destination IP address command.

Result

Result

PC > ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data:

Reply from 40.0.0.1: bytes = 32 time = 2ms TTL = 125

Reply from 40.0.0.1: bytes = 32 time = 2ms TTL = 125

Reply from 40.0.0.1: bytes = 32 time = 10ms TTL = 125

Reply from 40.0.0.1: bytes = 32 time = 2ms TTL = 125

Ping statistics for 40.0.0.1:

Packets: sent = 4, received = 4, lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 10ms, Average = 4ms.

Observation

- Routing Information Protocol (RIP) is a dynamic routing protocol that uses hop count as a routing metric to find the best path between source and destination. It is a distance-vector routing protocol.
- Hop count is the no. of routers coming in between source and destination. The path with ~~at least~~ least hop count is selected.
- Updates of the Network are exchanged periodically.
- Updates of routing information are always broadcast.
- Full routing tables are sent in updates.
- Routers always trust routing information received from neighbour routers.