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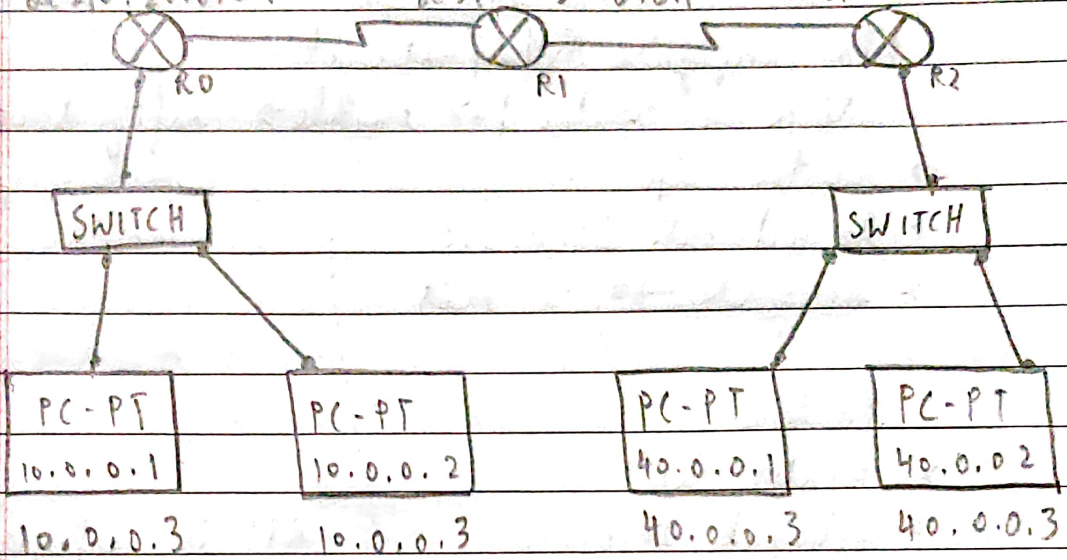
LAB - 5

AIM: Configuring RIP Routing Protocol in Routers

TOPOLOGY:



PROCEDURE: A topology was created with 3 routers-PT, 2 switch-PT & 2 PC-PT's connected to each switches using Copper straight through connections & serial DCE connections.

* First we configured end devices giving IP address 10.1, 10.2 & 40.1, 40.2.
* Then we configured routers using ip address <address> <subnet mask>.
* encapsulation ppp and clock rate 64000 used to specify ppp protocol and clock rate in routers 0 and 1 for the serial ports only.
* Configured RIP routing using router rip then, network <address>, where address refers to the networks directly connected to the router.
* ~~We use default configurations before encapsulation~~
* ~~ip route 0.0.0.0 0.0.0.0 20.0.0.2~~

OBSERVATION ppp → point to point protocol for serial clock connection.
encapsulation ppp for serial interfaces only
Clock rate only for clock interfaces.

To configure RIP protocal
Click on router 1 -> enable -> config terminal
> router rip network 10.0.0.0
> network 20.0.0.0
> ~~network 10.0.0.0~~ exit

Router 2
> router rip
> network 20.0.0.0
> network 30.0.0.0
> exit

Router 3
> router rip net 40.0
> network 30.0.0.0
> exit

RIP is configured in all the routers.

To check if router is collecting router info
> show ip route.

~~For config~~
~~Fast Ethernet~~
For every F.DCE connection to configure RIP with defined clock rate.
> encapsulation ppp
> clock rate 64000

RESULT: ping 40.0.0.1

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 = 2ms TTL = 125
Reply from 40.0.0.1: bytes = 32 time = 2ms TTL = 125
Packet sent = 4, Recieved = 4 (0% loss)
Approx. around ip in milliseconds.
Minimum = 2 ms Maximum = 40 ms
Average = 21 ms

Since RIP has been established, IP route does not have to be set for each router.

Before RIP has been set:
ping 10.0.0.1 -> 40.0.0.1 : Dest. host unreachable.

Before RIP
ping 10.0.0.1 -> 20.0.0.2 : Request timed out.

Only on analyzing correct gateway and protocol is the reply & recieved properly.

∴ RIP is established in the network correctly.

RIP : Routing Information Protocol
We use RIP to configure routers.
It is a distance vector routing protocol.
It knows only neighbours and it doesn't know entire topology routing. It is a dynamic routing protocol that uses hop count as a metric to find the best path b/w source & destination network.

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