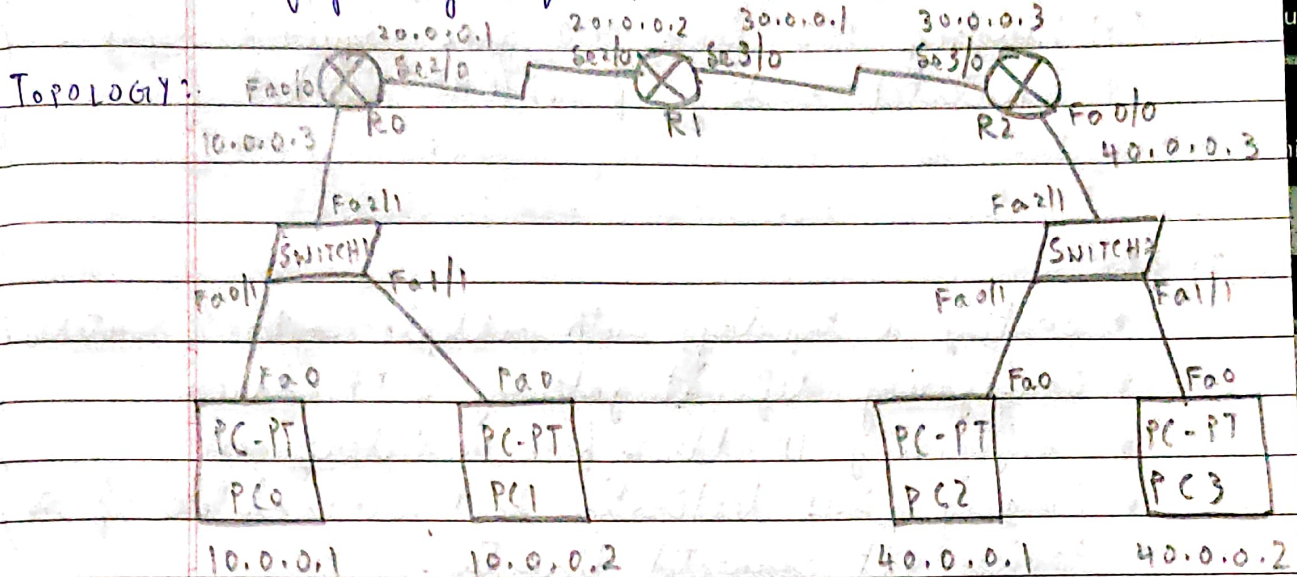## LAB - 4

AIM: Configuring default route to the router

TOPOLOGY:

PROCEDURE: A topology was created using 3 router-PT, 2 Switch PT and 2 PC'S connected to each switch using Copper straight through connections & serial DCE connections.

* Default gateways & unique IP addresses were configured for each PC.

* IP addresses were configured for each interface using CLI

* ~~Pinging PC2 from PC0 gave destination~~

OBSERVATION

* Pinging PC2 from PC0 gave destination host unreachable.

* IP routes for each router was viewed using: show ip route.

* Static ip route was configured for R1 using CLI commands: ip route dest-network subnet mask next-hop-address.

* Default ip route was configured for R0 & R2 using CLI commands:
  ip 0.0.0.0 0.0.0.0 next-hop-address
* Pinging PC2 from PC0 gave required reply.
* Simulated sending of an ICMP packet from PC0 to PC2.

OUTCOMES:

* Creating a topology with multiple routers & switches.
* Configuring default gateway & IP address.
* Configuring IP address for the interfaces.
* Pinging gives destination host unreachable if the devices not connected directly.
* Configuring default IP routes to a router ensures that the packet passes through the default route when no other route is available.
* On configuring default IP routes, gives required reply.
* The simulation of sending a simple PDU from source to destination shows the route taken by the ICMP packet.

RESULT: Before setting default router path

> ping 20.0.0.2
Pinging 20.0.0.2 with 32 bytes of data
Request timed out.
Request timed out.
    "
    "
> ping 30.0.0.1 & all other interfaces after that to end devices of other network.

Pinging 30.0.0.1 with 32 byts of data
Reply from 10.0.0.3 : Destination host Unreachable
                    "
                    "
                    "

Ping statistics
        Packets : Sent = 4, Recieved = 0, Lost = 4 (100% loss)

> Ping 10.0.0.2
Pinging 10.0.0.2 with 32 byts of data.
Reply from 10.0.0.2 : byts = 32 time = 17 ms TTL =125
            "   time = 3 ms   "
            "   time = 2 ms   "
            "   time = 2 ms   "

Ping statistics for 10.0.0.2
Packets : Sent = 4, Recieved = 4, lost = 0 (0% Loss)
Approx. round trip time in (ms)
Minimum = 2 ms , Maximum = 17 ms
                Average = 6 ms

→ After setting default router path for all
routers.

> Ping 30.0.0.1 & 30.0.0.2
Pinging 30.0.0.1 with 32 byts of data.
Request timed out
Reply from 30.0.0.1 : byts = 32 time = 2 ms TTL = 253
Request timed out
Reply from 30.0.0.1 : byts = 32 time = 12 ms TTL = 253

~~Ping statistics~~

→ Ping 40.0.0.1 & other interfaces

Pinging 40.0.0.1

Reply from 40.0.0.1 : byte =32 time=16 ms TTL =253
"   time = 12 ms
"   time = 2 ms
"   time = 9 ms

Ping statistics for 40.0.0.1

Packets Sent = 4, Recieved = 4, Lost = 0 (0% loss)

Approx round trip. (ms)

Min = 2 ms , Max = 16 ms

Average = 9 ms

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