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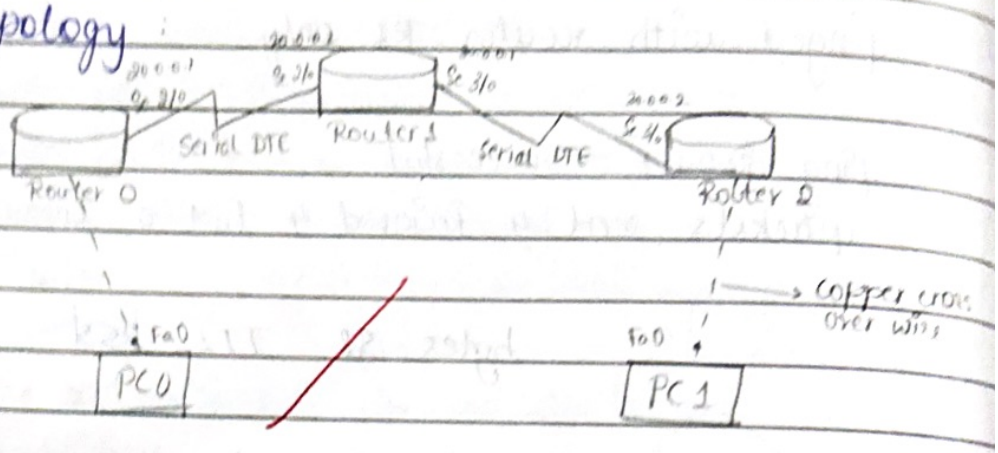
Lab 01 :

Aim: Configuration of static and default routing using 3 routers and two PC's

Topology :



Procedure :

→ Select three generic routers R0, R1, R2

→ Select two generic PC's PC0 and PC1

→ Connect PC0 with R0 and PC1 with R2 with the copper crossover wires, establishing fastethernet

→ Connect R0 and R1 & R2 using serial wires, establishing serial connection

→ Set the ip address and default gateways as shown in the figure.

→ In router 0 do :

>enable

#config terminal

#interface fast ethernet 0/0

#ip address 10.0.0.1 255.0.0.0

#no shutdown

Interface Fast Ethernet- 0/0, changed

#Exit

#interface serial 2/0

#ip address 20.0.0.1 255.0.0.

#no shut

Interface Serial 2/0, changed state to down

#Exit

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In router 2 do :

>enable

config terminal

interface Serial 2/0

ip address 20.0.0.2 255.0.0.0

no shut

Interface Serial 2/0, changed state to up.

Exit

Interface Serial 3/0

ip address 30.0.0.1 255.0.0.0

no shut

Interface Serial 3/0. changed state to down

Exit

In router 3 do :

>enable

show ip route

C 20.0.0.0/8 is directly connected, serial 2/0

C 30.0.0.0/8 is directly connected, serial 3/0

config terminal

ip route 10.0.0.0 255.0.0.0 20.0.0.1

ip route 40.0.0.0 255.0.0.0 30.0.0.2

Exit

Show ip route

S 10.0.0.0/8 [1/0] via 20.0.0.1

C 20.0.0.0/8 is directly connected, serial 2/0

C 30.0.0.0/8 is directly connected, serial 3/0

S 40.0.0.0/8 [1/0] via 30.0.0.2

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To default routing in Router R0 do;
>enable
#~~enable~~
#config terminal
#ip route 0.0.0.0 0.0.0.0 20.0.0.2
#exit
#show ip route
C 10.0.0.0/8 is directly connected, FastEthernet 0/
C 20.0.0.0/8 is directly connected, Serial 2/0
S* 0.0.0.0/0 [1/0] via 20.0.0.2

→ To default routing in Router R1, do
>enable
#config terminal
#ip route 0.0.0.0 0.0.0.0 30.0.0.1
#exit
#show ip route
C 30.0.0.0/8 is directly connected, serial 3/0
C 40.0.0.0/8 is directly connected, FastEthernet 1/0
S* 0.0.0.0/0 [1/0] via 30.0.0.1
ping 40.0.0.10 from 10.0.0.10 and vice versa

Observation:
→ PC0:
>ping 40.0.0.10
"packets sent = 4 Recieved = 3 Lost 1 (25% loss)"
→ PC1:
>ping 10.0.0.10
"packets sent = 4 Recieved = 3 Lost = 0 (0% loss)"
→ It was understood that while static routing enables identification neighbouring network already present, default routing is essential to ensure proper ident

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cation and redirection of packets from device IPS which are not recognised

→ It was observed that initial ping had "request timeout since it took some time ~~for~~ for the packets to identify the destination

→ Then later ping did not have any "request timeout" and was successful with 0% loss since the network is already identified.

Reply from 40.0.0.10 : bytes : 32 time : 0ms TTL : 125
Reply from 40.0.0.10 : bytes : 32 time : 6ms TTL : 125
Reply from 40.0.0.10 : bytes : 32 time : 9ms TTL : 125
Reply from 40:0 0.10 : bytes : 32 time : 7ms TTL : 125

Destination unreachable

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