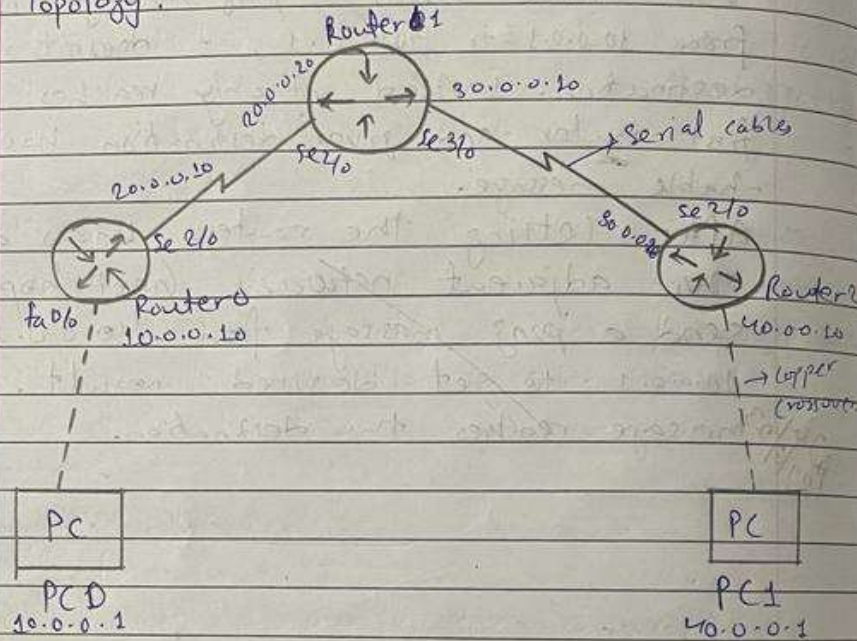


Experiment : 3

Aim: Configure default route and static route for a connection of routers.

Topology:



Procedure:

1. Select 3 generic routers and two PCs as end devices connect the PC's to different routers with copper crossover and connect both the routers to the main router with serial cables.
2. Set the IP address of PC and gateways.
3. Set the gateway address in all the routers taking interface as fast ethernet for the PC's and serial for routers.
4. Connect the PC's to the interfaces.
5. config. steps
 - > enable (router 0)
 - #config t

```
# interface fastethernet 0/0
# IP address 10.0.0.10 255.0.0.0
# no shut.
# exit
# interface serial 2/0
# ip address 20.0.0.10 255.0.0.0
# no shut
# exit
```

Similarly for router 1

```
> enable
# config t
# interface serial 2/0
# ip address 20.0.0.20 255.0.0.0
# no shut
# exit
# interface serial 3/0
# ip address 30.0.0.10 255.0.0.0
# no shut
# exit
```

for router 2.

```
> enable
# config t
# interface fastethernet 0/0
# ip address 40.0.0.10 255.0.0.0
# no shut
# exit
# interface serial 2/0
# ip address 30.0.0.20 255.0.0.0
# no shut
# exit.
```


6. we need to set IP routes for all routes via routers

for router-0 & router-2, we do default routing and for router-1 static routing is done.

for router-0

config t

ip route 0.0.0.0 0.0.0.0 20.0.0.20

no shut

exit

show ip route

C 10.0.0.0/8 is directly connected, fastethernet 0/0

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

S* 0.0.0.0/0 [1/0] via 20.0.0.20

Similarly for Router-2

config t

ip route 0.0.0.0 0.0.0.0 30.0.0.30

exit

show ip route.

for Router-1

config t

ip route 10.0.0.0 255.0.0.0 20.0.0.0

ip route 40.0.0.0 255.0.0.0 30.0.0.0

exit

show ip route.

S 10.0.0.0/8 [1/0] via 20.0.0.0

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 30.0.0.0

7) Now, we ping 10.0.0.10 from the command prom-
-pt of 40.0.0.1

Result:

PC > ping 40.0.0.1

Pinging 40.0.0.1 ~~with~~ with 32 bytes of data:

Request time out.

Reply from 40.0.0.1: bytes=32 time=7ms TTL=125

Reply from 40.0.0.1: bytes=32 time=7ms 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 = 3, lost = 1 (25% loss),

Approximate round trip times in milli-seconds:

Minimum = 2ms, Maximum = 7ms, Average = 5ms

Observation

- A default route is the route which takes effect when no other route is available for an IP address destination.
- If a packet is received, the device first checks the IP destination address if the IP destination address is not local the device checks its routing table.
- If the remote destination subnet is not listed then the packet is forwarded to the next hop towards the destination using the default route.
- The process repeats until the packet is delivered.

12/13/21