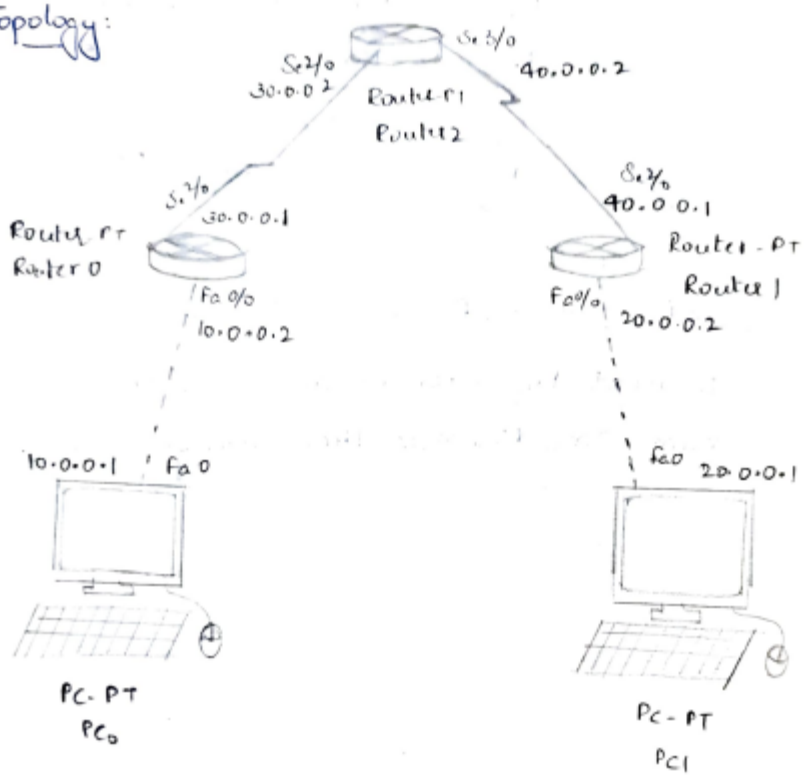
30/4/23

Lab-4

Aim : Configure default route, Static route to the Router

Topology:



Procedure:

① Drag and drop 2 Pc's and 3 Routers from the end devices. Connect the 1 router for each of the Pc's [Pc0 and Pc1] And connect the 3rd Router to the other two Router as shown in the topology.

② Set the IP address of Pc0 as 10.0.0.1 and IP address of Pc1 as 20.0.0.1, set the gateway as 10.0.0.2 and 20.0.0.2 for two Pc's respectively.

③ Now config the ip addres of ports in Router 0 & Router 1 using the following commands

```
Router > enable
Router # config t
Router (config) interface fastEthernet 0/0
Router (config-if) # ip address 10.0.0.2 255.0.0.0
Router (config-if) # no shut
Router (config-if) # exit
Router (config) # interface Serial 2/0
Router (config-if) # ip address 30.0.0.1 255.0.0.0
Router (config-if) # no shut
Router (config-if) # exit
Router (config) # exit
```

These are the commands for Router 0. Similarly Router 1 and Router 2 need to be configured.

④ As Router 0 and Router 1 are connected to only one side we perform default routing. using following CLI commands:

For Router 0

```
Router > enable
Router # config t
Router (config) # ip route 0.0.0.0 0.0.0.0 30.0.0.2
```

For Router 1

```
Router # config t
Router (config) # ip route 0.0.0.0 0.0.0.0 40.0.0.2
```

Now, Do the Static Routing for the Router 2 using Commands :-

Router # config t

Router (config) # ip route 10.0.0.0 255.0.0.0, 30.0.0.2

Router (config) # ip route 20.0.0.0 255.0.0.0 40.0.0.2

Router (config) # exit

Router #

⑤ Now. Check the routing information

For Router 0

Router # show ip route

C - Connected S-Static * - Candidate default

Gateway of last resort is 30.0.0.2 to network 0.0.0.0

C 10.0.0.0/8 is directly connected, Fast Ethernet 0/0

C 30.0.0.0/8 is directly connected, Serial 2/0

S* 0.0.0.0/0 [1/0] via 30.0.0.1

Router 2:

Router # show ip route

C - connected S-Static

S 10.0.0.0/8 [1/0] via 30.0.0.1

S 20.0.0.0/8 [1/0] via 40.0.0.1

C 30.0.0.0/8 is directly connected, Serial 2/0

C 40.0.0.0/8 is directly connected, Serial 3/0

Ping Commands (Output):

PC > ping 20.0.0.1

pinging 20.0.0.1 with 32 bytes of data

Reply from 20.0.0.1 : bytes = 32 time = 4ms TTL = 125

Reply from 20.0.0.1 : bytes = 32 time = 18ms TTL = 125

Reply from 20.0.0.1 : bytes = 32 time = 17ms TTL = 125

Reply from 20.0.0.1 : bytes = 32 time = 25ms TTL = 125

ping statistics for 20.0.0.1 :

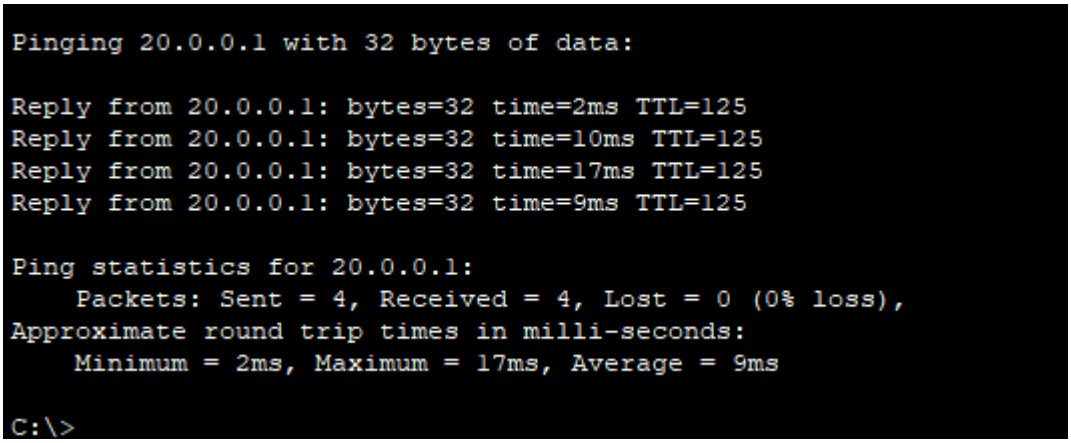
Packets : Sent = 4 , Received = 4 , Lost = 0 (0% Loss)

Approximate round trip times in milli-seconds :

Minimum = 9ms , Maximum = 25ms , Average = 16ms

TOPOLOGY for 3 routers

OUTPUT


Pinging 20.0.0.1 with 32 bytes of data:
Reply from 20.0.0.1: bytes=32 time=2ms TTL=125
Reply from 20.0.0.1: bytes=32 time=10ms TTL=125
Reply from 20.0.0.1: bytes=32 time=17ms TTL=125
Reply from 20.0.0.1: bytes=32 time=9ms TTL=125
Ping statistics for 20.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 17ms, Average = 9ms
C:\>