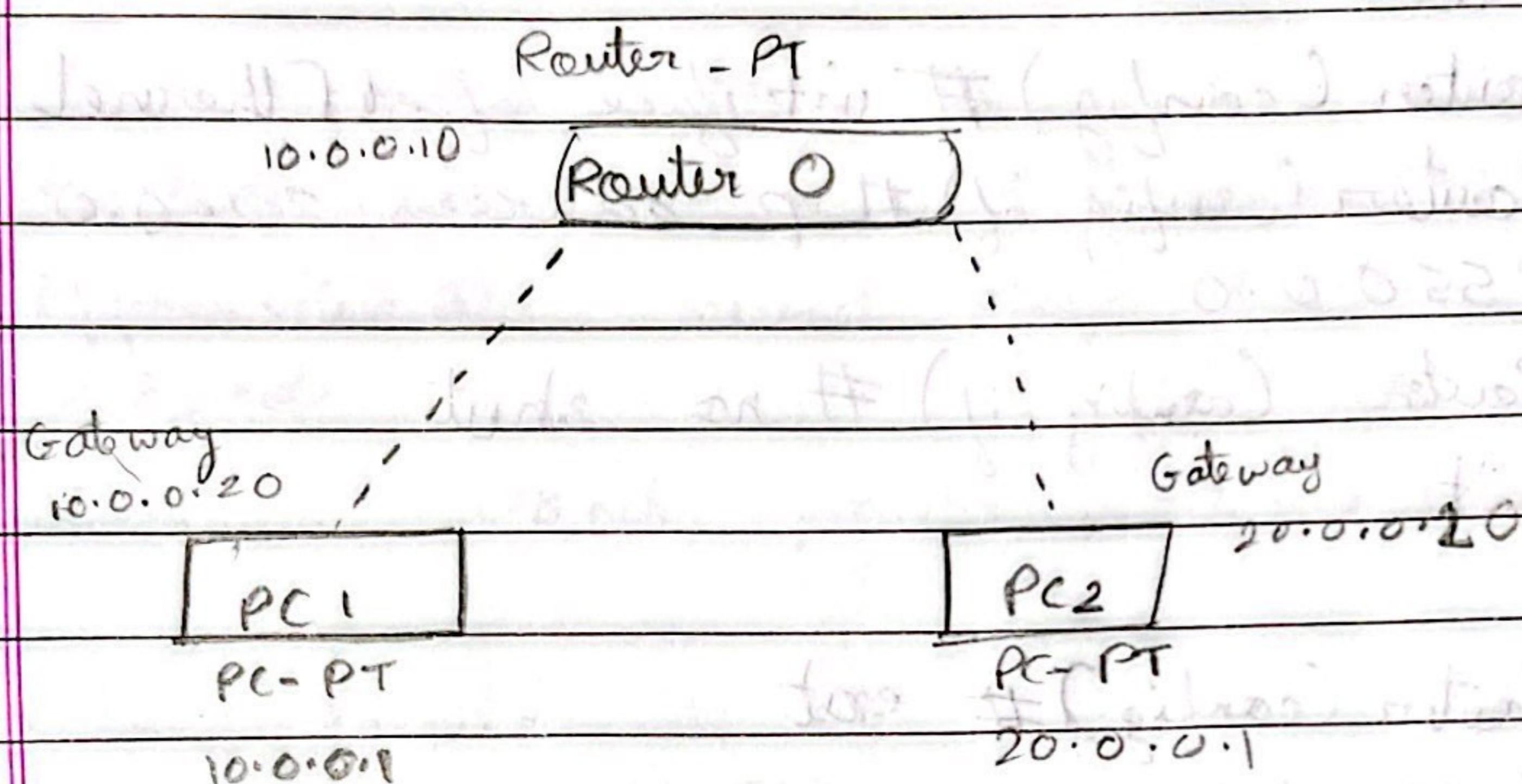


Configure ip address to routes in packet tracer. Explore the following messages: Ping, responses destination unreachable request timed out, reply.

Aim:- Configuring IP addresses to router and exploring ping messages



Procedure

- 1) Select router-PT and place in workspace
- 2) Take 2 end devices as PC-PT and drop them in workplace.
- 3) Connect fast ethernet % of PC1 to Fast ethernet % of PC2 to fast ethernet % router using copper cross-over
- 4) Set IP address of PC1 as 10.0.0.1 and PC2 as 20.0.0.1
- 5) In settings set gateway of PC1 as 10.0.0.1 and PC2 as 20.0.0.1
- 6) Setup the surface of router using following steps.

To configure router command line interface (CLI) is used.

Router (LI)

(Press N)

Router > enable

Router # > config t

Router (config) # ip address 10.0.0.10
255.0.0.0

Router (config-if) # no shut
exit

Router (config) # interface fast Ethernet

Router (config-if) # ip address 20.0.0.10
255.0.0.0

Router (config-if) # no shut
exit

Router (config) # exit

Router #

Show ip route

10.0.0.0 /s is directly connected,
Fast Ethernet 0/0

200.0.0.0 /s is directly connected,
Fast Ethernet 1/0

- 7) Green lights appear on wires when no shut commands are given which indicate that they are ready for data transmission

Ping output in PCO:-

P(> ping 20.0.0.1)

Pinging 20.0.0.1 with 32 bytes of data

Request timed out

Reply from 20.0.0.1 : bytes = 32 time = 0ms TTL = 127

Reply from 20.0.0.11 : bytes = 32 time = 0ms TTL = 127

Ping statistics for 20.0.0.1

Routes:- Sent = 4, received 3: Loss = 1 (75% loss),

Approximate round trip timer in milliseconds

Minimum = 0 ms, maximum = 1 ms, Average

Observations:-

On ping in PCO for the first time there is a 25% loss.

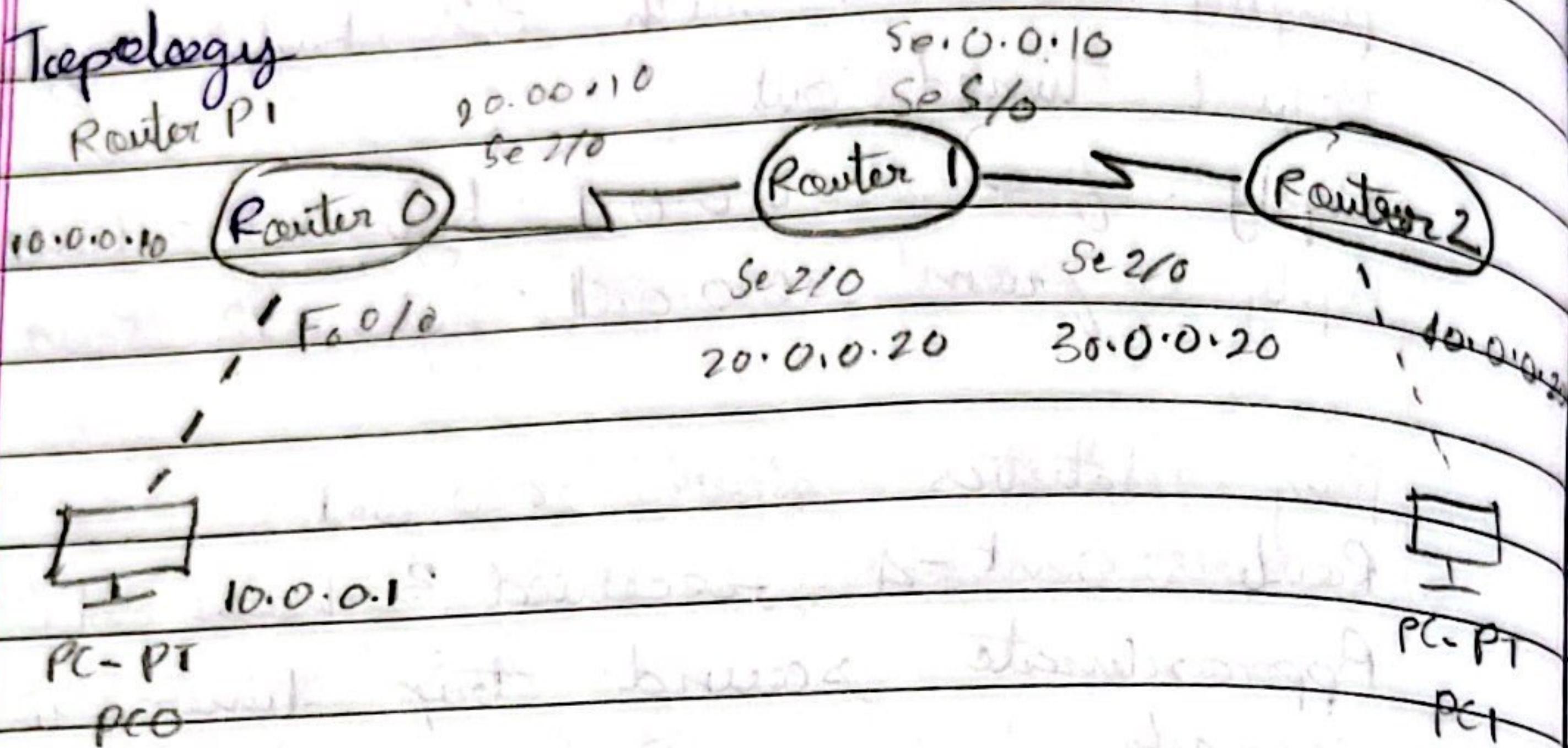
From next ping there are no losses.

27/2/2023

2b) Aim configure using 3 router and 2 PC

(Router)

Topology



Procedure

- 1) The network is started by selecting ~~random~~ end devices PC0 to PC1 is genuine PC's and placing them in workspace.
- 2) Select 3 router-PT and place them as router 0, router 1, and router 2 workspace.
- 3) PC0 & PC1 are connected to router 0 and router 2 respectively using copper crossover.
- 4) Connect router 0 to router 1, router 1 to router 2.
- 5) Set up IP address of PC0 to 10.0.0.1 PC1 to 20.0.0.1. Set gateway of PC0 as 10.0.0.20 PC1 as 10.0.0.10.

Configure router by opening CLI

In Router 0

Router > enable

Router # config t

Router (config) # interface fastEthernet 0/0

Router (config-if) # ip address 10.0.0.10
255.0.0.0

Router (config-if) # no shut
exit

Router (config) # interface serial 2/0

Router (config-if) # ip address 20.0.0.10
255.0.0.0

Router (config-if) # ip address 20.0.0.10
no shut
exit

exit

In Router 1

Router > enable

Router # config t

Router (config) # interface serial 2/0

Router (config-if) # ip address 20.0.0.20
255.0.0.0

Router (config-if) no shut
exit

Router (config) # interface serial
3/0

Router (config-if) # ip address
30.0.0.20 255.0.0.0

Router (config-if) # no shut
exit

Router (config) # exit

In Router 2

Router > enable

Router # config #

Router (config) # interface serial 2/0

Router (config) # ip address 30.0.0.2
255.0.0.0

Router (config) # no shut

exit

Router (config-if) # interface fastEthernet 0/0

Router (config) # ip address 40.0.0.10
255.0.0.0

Router (config) # no shut

exit

Router (config) exit

IP Router table

Router 0

Router # 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

Router 1

Router # show ip route

C 20.0.0.0/8 is directly connected

C 30.0.0.0/8 is directly connected
Fast Ethernet 0/0

Ping output in PC0

PC>Ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data

Reply from 10.0.0.10: Destination host unreachable

Reply from 10.0.0.10: Destination host unreachable

Reply from 10.0.0.10: Destination host unreachable

Ping statistics for 10.0.0.1

• Packets: sent = 4, received = 0, loss = 100% (1/4) (avg)

Observation:

Green lights appear on the wires when no shut is written.

New configure the router which does not have data of other network. Add the network in CLI. In all stations, CLI write config t. then set route

Routers

ip route 30.0.0.0 255.0.0.0 20.0.0.30

ip route 40.0.0.0 254.0.0.0 20.0.0.30

Router 1

ip route 10.0.0.0 255.0.0.0 20.0.0.10

ip route 20.0.0.0 255.0.0.0 30.0.0.20

Router 2

ip route 10.0.0.0 255.0.0.0 30.0.0.10

ip route 20.0.0.0 255.0.0.0 30.0.0.10

new ip router table
exit

Router 0:

C 10.0.0.0/8 is directly connected, fast
ethernet 0/0

C 20.0.0.0/8 is directly connected, serial
(30.0.0.0/8) [1/0] via 30.0.0.30

S 40.0.0.0/8 [1/0] via 20.0.0.20

Router 1:

S 10.0.0.0/8 [1/0] via 30.0.0.10

S 20.0.0.0/8 [1/0] via 30.0.0.10

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

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

Router 2:

S 10.0.0.0/8 [1/0] via 20.0.0.10

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 30.0.0.20

Ping messages

PC > Ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data

Request timed out

Reply from 40.0.0.1 : bytes = 32 time = 2 ms
TTL = 125

Reply from 90.0.0.1 : bytes = 32 time = 2ms

TTL = 125

Reply from 90.0.0.21 : bytes = 32 time = 2ms

TTL = 125

Ping statistics for 90.0.0.1

Packet sent = 4, received = 3, lost = 1
(25% loss)

Approximate round trip times in milliseconds:

minimum = 2ms, maximum = 20ms, Average = 2ms

Observation :-

In first ping destination host was unreachable as router 0 has no knowledge about the network 30.0.0.0 and 40.0.0.0 and the packets got stuck or lost.

After this ip route is explicitly given. Now pinging them is 25% loss in first time, the following ones have no loss.

ND
27/12/23

