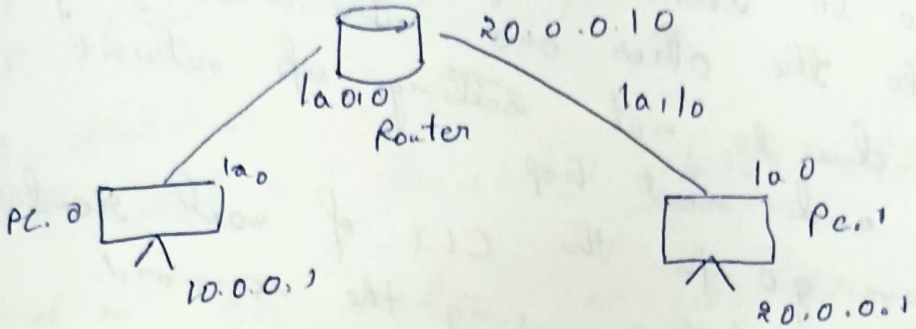
Experiment - 1. 22-06-23

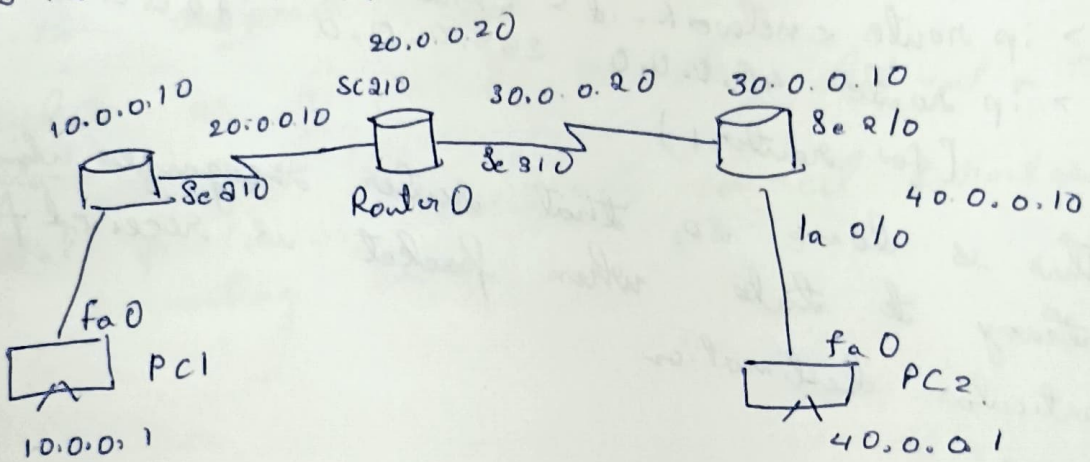
Aim: Configure IP Address to routers in packet tracer Explore the following messages ping responses, destination unreachable, request timed out, reply

Topology

Experimental setup



3 Router Topology



Procedure: Take 2 PC and place them as shown in the topology, 2 different IP address as they belong to 2 different networks Place 2 routers belonging to these 2 networks bring their gateways and place the 3rd router in between to connect the 2 networks Set gateways for 2 PCs and then going to the C1I interface for each router specify the IP route for file to transfer using the commands

router > enable
Router > # config terminal
Router config : interface <port>
Router config-if : Ip address <ip> <subnet mask>
Router (config) : no shut

Do this for all three routers.

Then go to terminal of either PC and try to ping to the other one. The message fails to deliver due to not setting up network static router and next hop.

We again go for the CLI of each router and setup the "nxt hop" using the command.

> ip route <network-id> <mask> <next-hop>
> ip route 40.0.0.0 255.0.0.0 20.0.0.20
(for router 1)

This is done so that router recognizes which pathway to take when packet is received for particular destination

Result:

:) > ping 40.0.0.1

Pinging 40.0.0.1 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
Reply from 10.0.0.10 : Destination host unreachable

Ping statistics
Packets sent = 4 ; Received = 0 ; loss = 4 (100% loss)

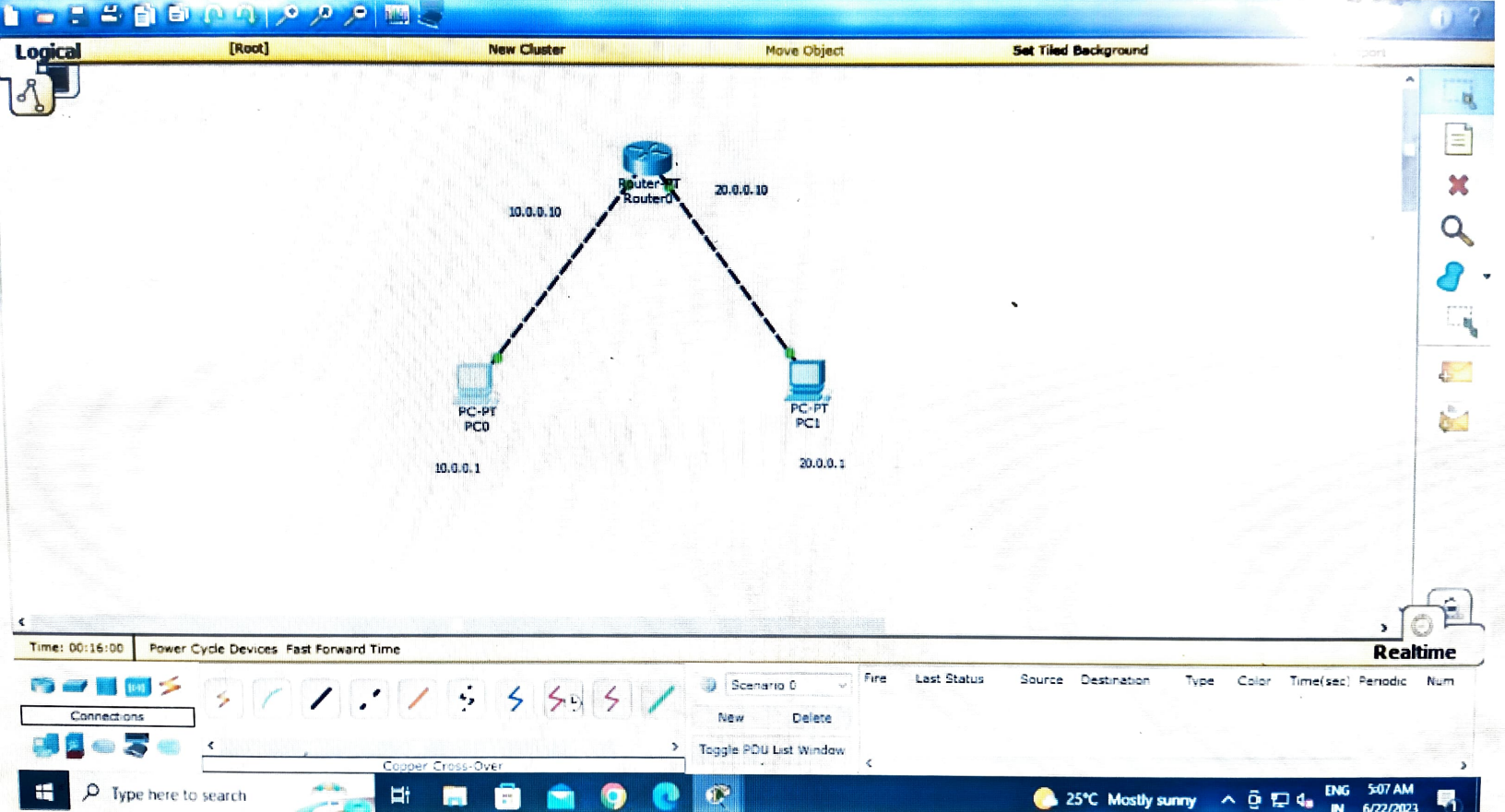
;;) > ping 40.0.0.1

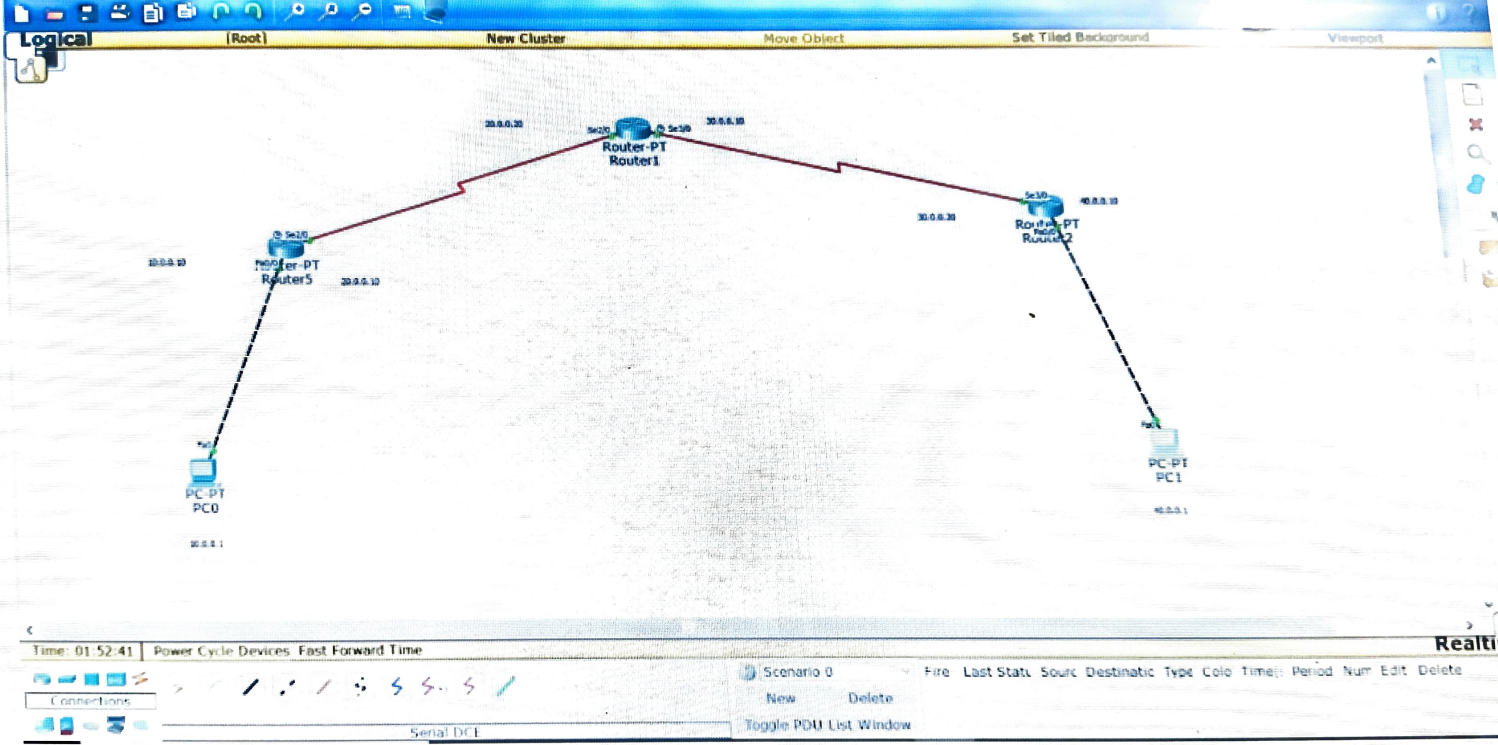
Ping 40.0.0.1 with 32 bytes of data

Request timed out
Reply from 40.0.0.10 bytes = 32 time = 2ms TTL
Reply from 40.0.0.10 bytes = 32 time = 2ms TTL
Reply from 40.0.0.10 bytes = 32 time = 2ms TTL

Ping statistics
Packets sent = 4 ; Recieved = 1, loss = 1 (25% loss)

Observation: The router connects LAN to the internet It connects different networks with different loss.
Packets are forwarded to the destination through network hopping.
Serial ports are used to connect 2 routers the connecting cable


Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Router-PT
Router0
10.0.0.10
20.0.0.10
PC-PT
PC0
PC-PT
PC1
10.0.0.1
20.0.0.1
Time: 00:16:00
Power Cycle Devices Fast Forward Time
Realtime
Connections
Copper Cross-Over
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(sec)
Periodic
Num
Type here to search
25°C Mostly sunny
ENG
IN
5:07 AM
6/22/2023


Logical
(Root)
New Cluster
Move Object
Set Tiled Background
Viewport
Router-PT
Router1
Router-PT
Router5
Router-PT
Router2
PC-PT
PC0
PC-PT
PC1
Time: 01:52:41
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Serial DCE
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Statu
Sourc
Destinatic
Type
Colo
Time(
Period
Num
Edit
Delete

Command Prompt

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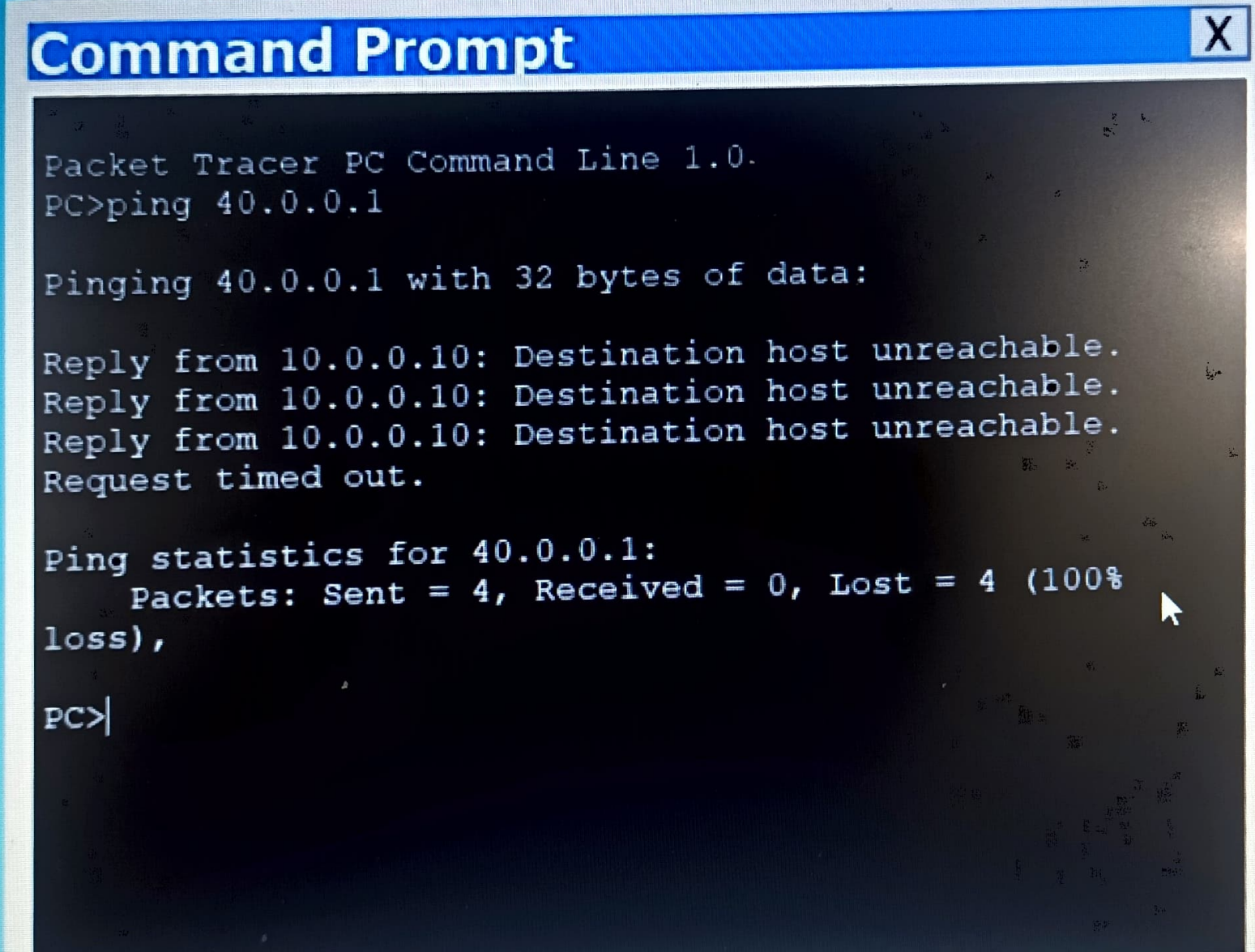
Packet Tracer PC Command Line 1.0
PC>ping 20.0.0.1

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 20.0.0.1: bytes=32 time=0ms TTL=127
Reply from 20.0.0.1: bytes=32 time=10ms TTL=127

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 10ms, Average = 3ms

PC>
```


Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 40.0.0.1
Pinging 40.0.0.1 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.
Request timed out.
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 0, Lost = 4 (100%
loss),
PC>