WEEK 2

Configure IP address to routers (one and three) in packet tracer. Explore the following messages: ping responses, destination unreachable, request timed out, reply.

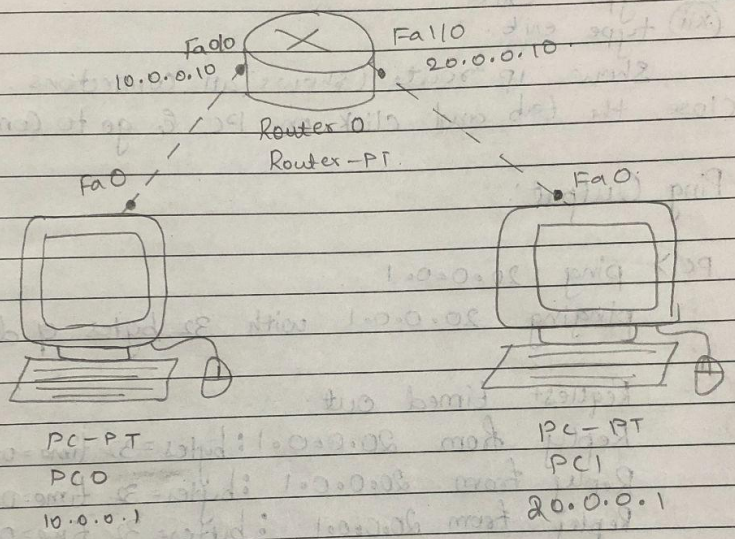
OBSERVATION:

22/6/23

Lab – 2.

Aim: Configure IP address to a single router. Explore the following messages. Ping message, destination unreachable request timed out reply.

Topology:



Procedure:

1. Select one Generic router & 2 generic PC's. Connect PC's to router using copper cross-over cable.
2. Set the IP address of both PC's by clicking on PC & Config tab. Along with IP address set gateway in Settings.
3. To set IP address of router, click on it and go to CLI tab and type the following commands.
   - (i) type No and press enter.
   - (ii) type enable and press enter.
   - (iii) type Configt and press enter.
   - (iv) type interface fastethernet 0/0 & press enter.
   - (v) type IP address 10.0.0.10 255.0.0.0 & press enter.

(vi) type No shut and press enter.
(vii) type exit
(viii) type interface fastethernet 1/0 & press enter.
(ix) type IP address 20.0.0.10 255.0.0.0 & press enter
(x) type no shut & press enter.
(xi) type exit
(xii) type exit.
show ip route (shows all connections.

4. Close the tab and click on PC & go to Command prompt

Ping Output:

PC> ping 20.0.0.1
pinging 20.0.0.1 with 32 bytes of data.

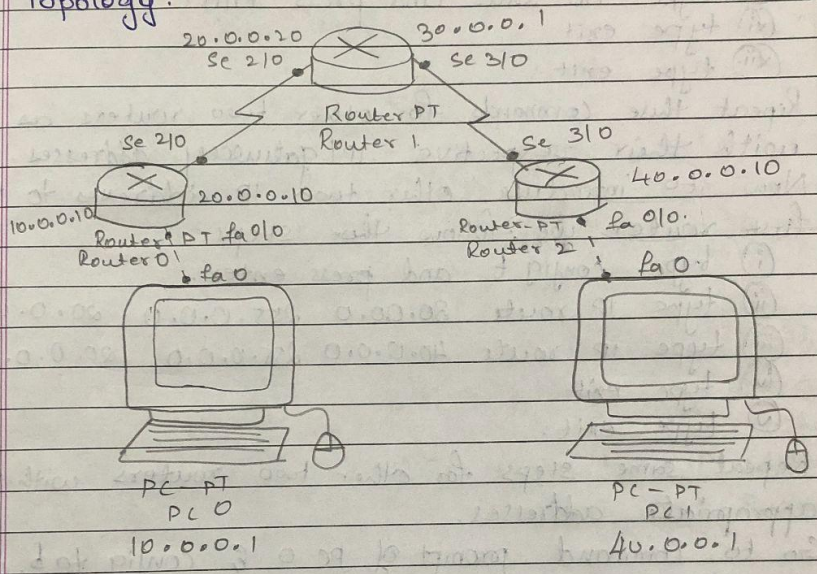
Request timed out.
Reply from 20.0.0.1: bytes = 32 time = 0ms TTL = 127
Reply from 20.0.0.1 : bytes = 32 time = 0ms TTL = 127
Reply from 20.0.0.1 : bytes = 32 time = 0ms TTL = 127

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 = 10 ms, Average = 3ms.

Observation:
When we ping the destination pc we get allocated with 32 bytes out of which first 8 bytes is request timed out which learns about router and addresses of end devices. Rest bytes are used for sending packets to destination addresses with 25% loss. If pinged again all bytes are used for sending message without request timed-out message.

Aim: Configure IP address to three routers in packet tracer. Explore the following messages. Ping response, destination unreachable, request timed out reply.

Topology:



Procedure:

1. Connect 2 PC's and 3 routers using copper cross over cable for PC to router & serial DCE cable to connect router to router.
2. Set IP address of both PC's and their gateway numbers.
3. Now for setting IP address & gateway numbers to routers. Select a router and perform following commands:
   - (i) type no & press enter.
   - (ii) type enable & press enter.
   - (iii) type config t & press enter.
   - (iv) type interface fastethernet 0/0 & press enter.
   - (v) type IP address 10.0.0.10 255.0.0.0 & press enter

(vi) type no shut & press enter.
(vii) type exit
(viii) type interface se 2/0 & press enter.
(ix) type IP address 20.0.0.10 255.0.0.0 & press enter.
(x) type no shut and press enter.
(xi) type exit
(xii) type exit.

4. Repeat these commands for other two routers as well with their respective IP/gateway addresses.
5. Now to introduce other two IP addresses to the ~~first~~ router we follow these steps.
   (i) type config t and press enter.
   (ii) type IP route 30.00.0 255.0.0.0 20.0.0.20.
   (iii) type IP route 40.0.0.0 255.0.0.0 20.0.0.20.
   (iv) type exit
   (v) type exit.
6. Repeat same steps for other two routers with their appropriate addresses.
7. Go to command prompt of PC 0 & config tab. and ping the second PC, PC 1.

Ping Output

Output 1:

```
PC> ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data.
Reply from 10.0.0.1 : Destination host unreachable
Reply from 10.0.0.1 : Destination host unreachable.
Reply from 10.0.0.1 : Destination host unreachable.
Request timed out.
Ping statistics for 40.0.0.1 :
Packets : Sent=4, Recieved=0, Lost=4 (100% loss).
```

Output 2:

```
PC> ping 10.0.0.1

Pinging with 32 bytes of data.
Reply from 10.0.0.1: bytes=32. time=2 ms TTL=125.
Reply from 10.0.0.1 : bytes=32 time=2ms TTL=125
Reply from 10.0.0.1 : bytes=32 time=2ms TTL=125
Reply from 10.0.0.1 : bytes=32 time=2ms TTL=125
Ping statistics for 10.0.0.1
  Packets : Sent=4, Received=4, lost=0 (0% loss)
  Approximate round trips times in milli-seconds.
  Minimum=2ms, Maximum=8ms, Average=3ms.
```

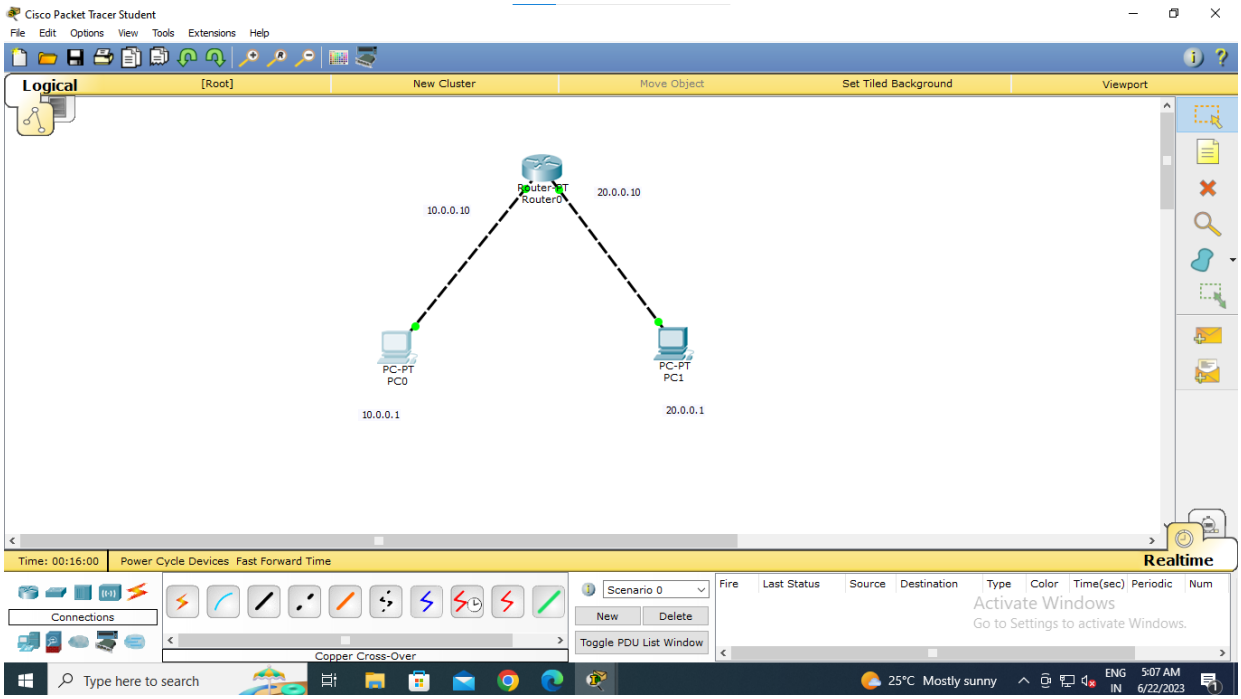
Observation:

When the routers are not introduced with other two IP addresses and we ping then we get a message saying host unreachable. Once when we introduce routers with other two IP addresses and we ping, now we get message sent sucessfully with 0% loss.

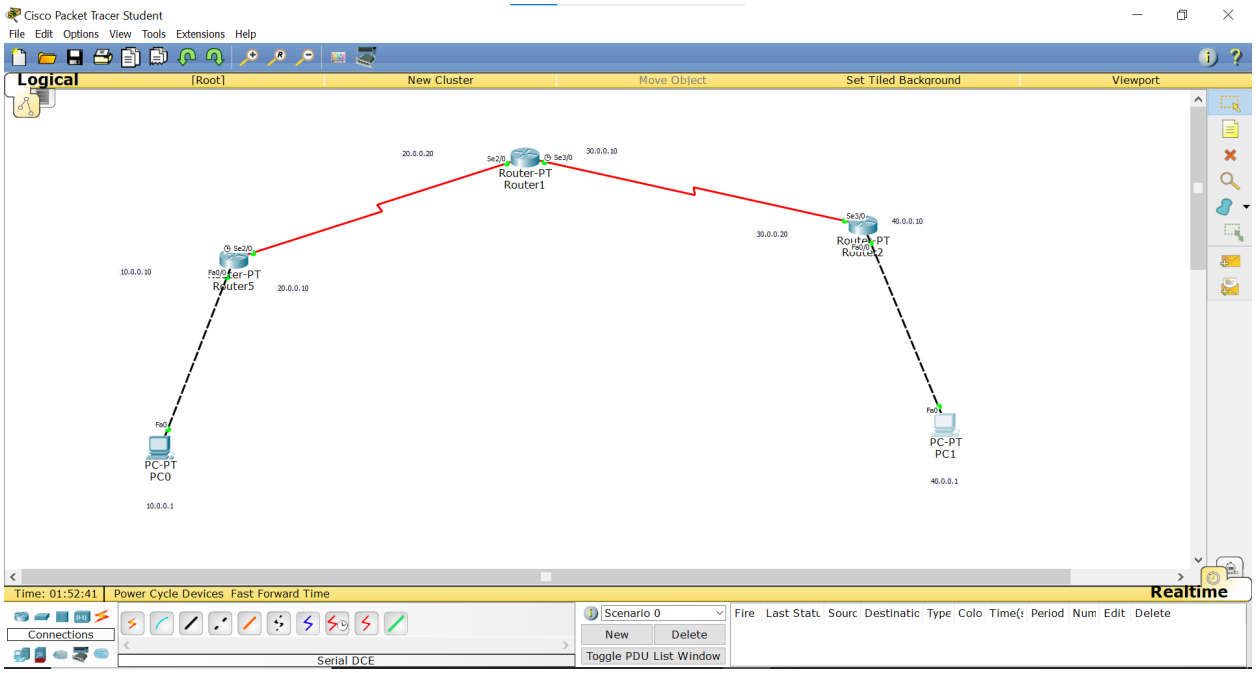
13/1/2023

TOPOLOGY:

PROGRAM 2.1

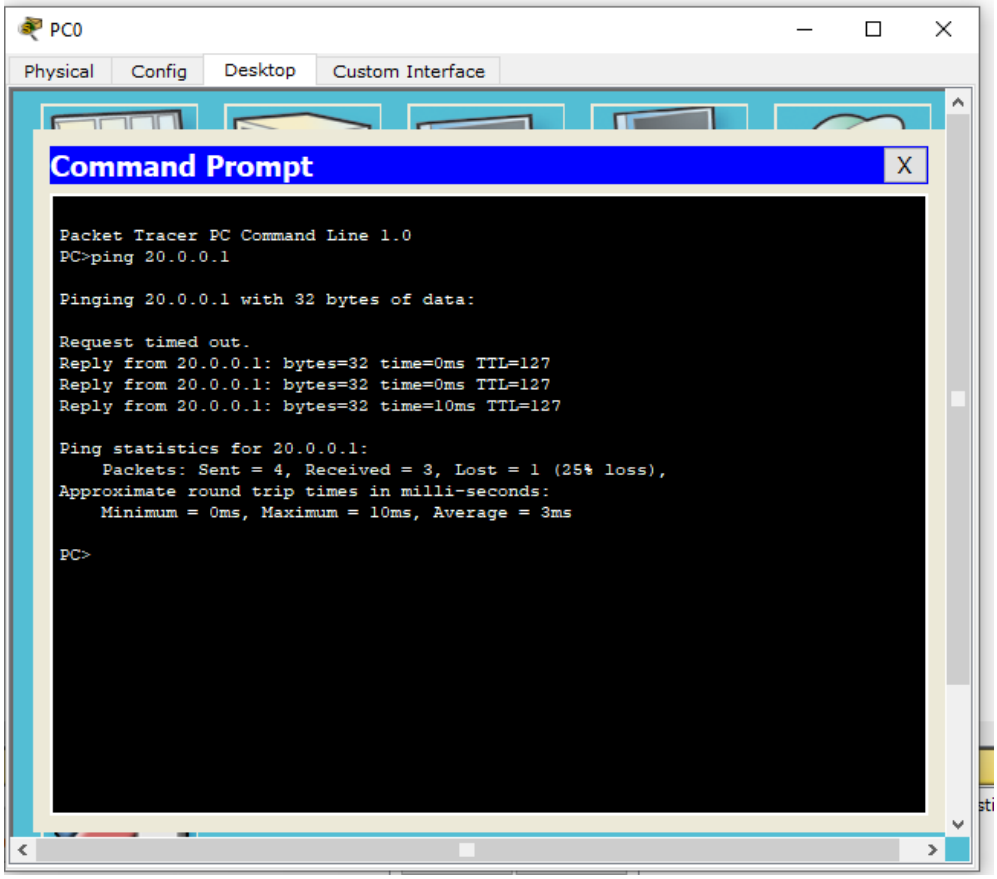


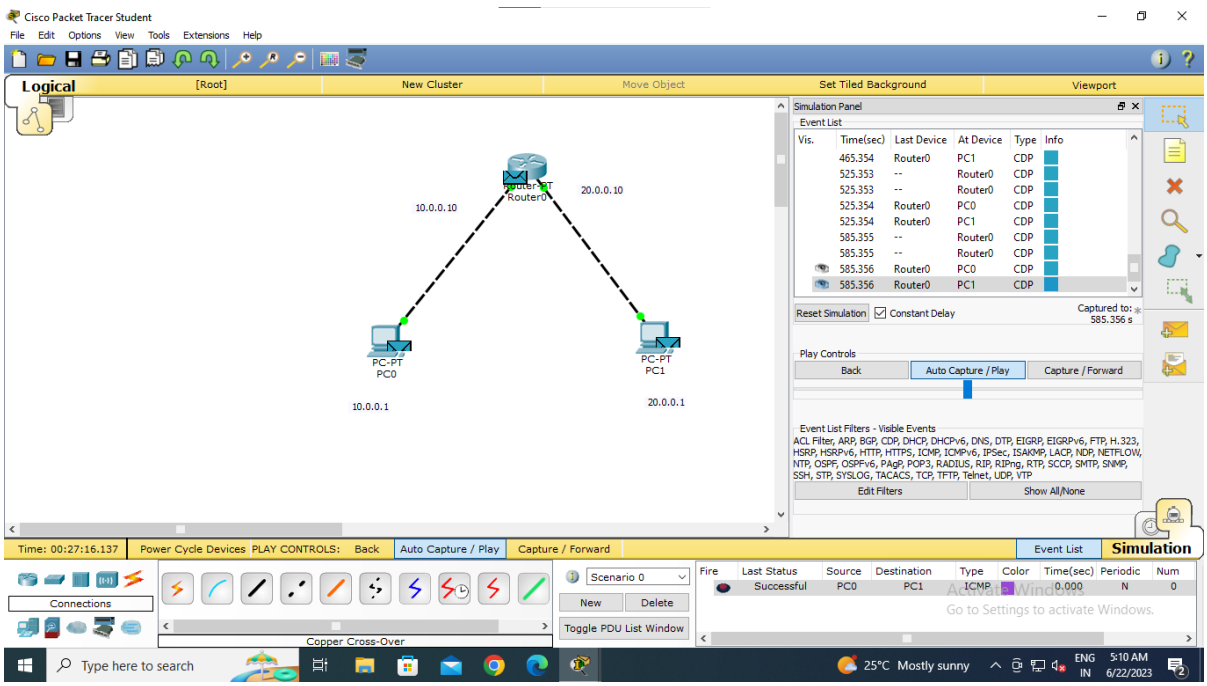
PROGRAM 2.2



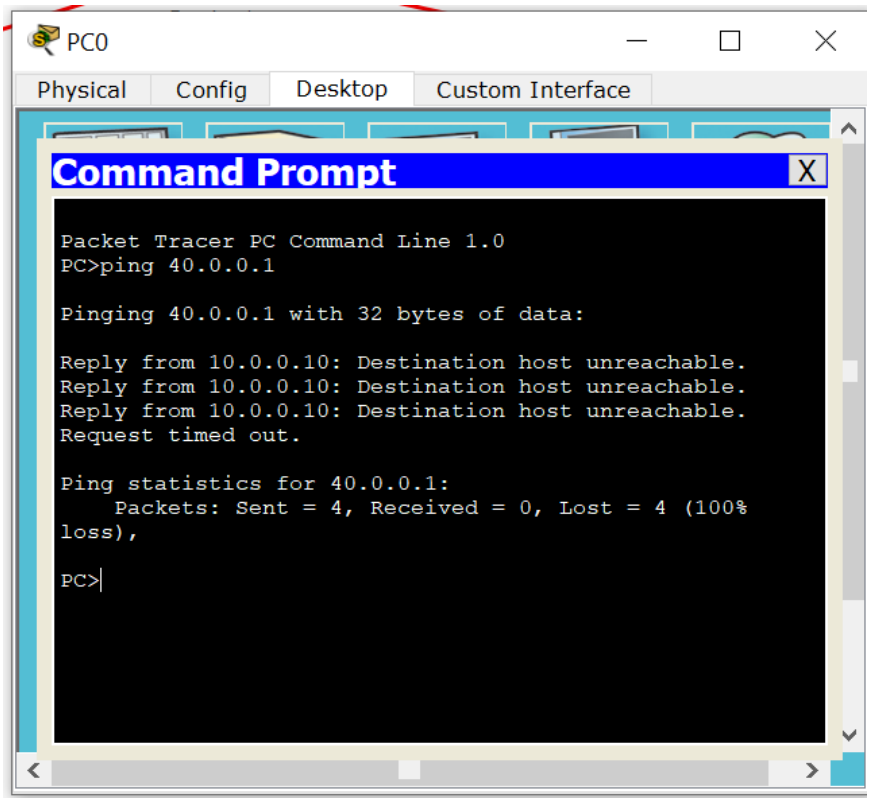
OUTPUT:

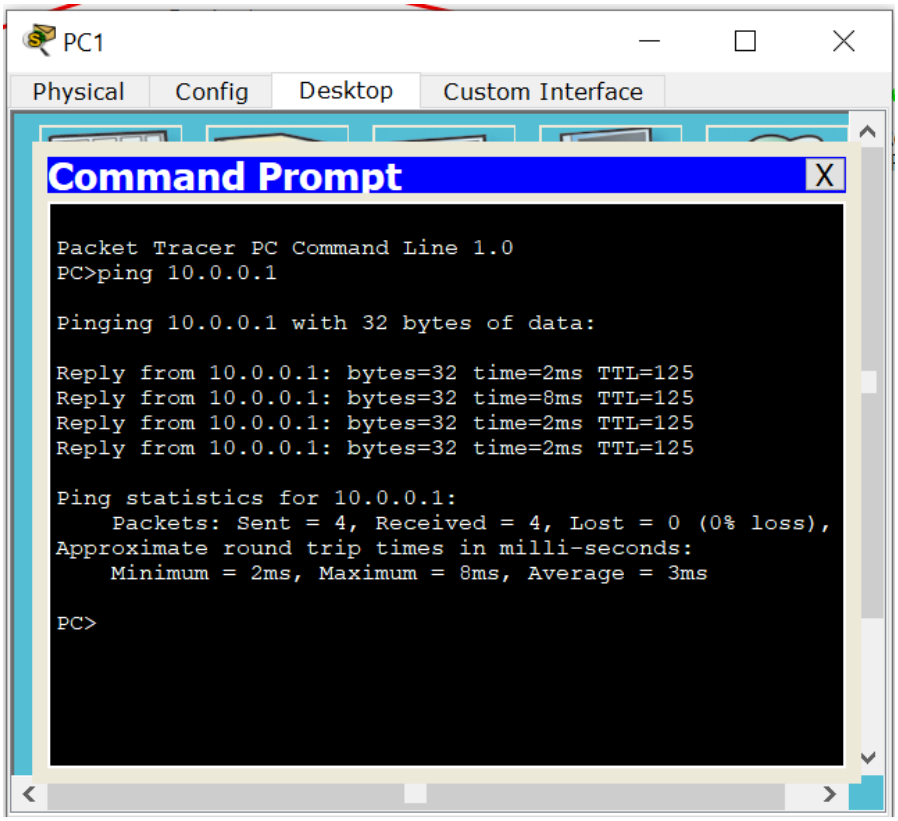
PROGRAM 2.1

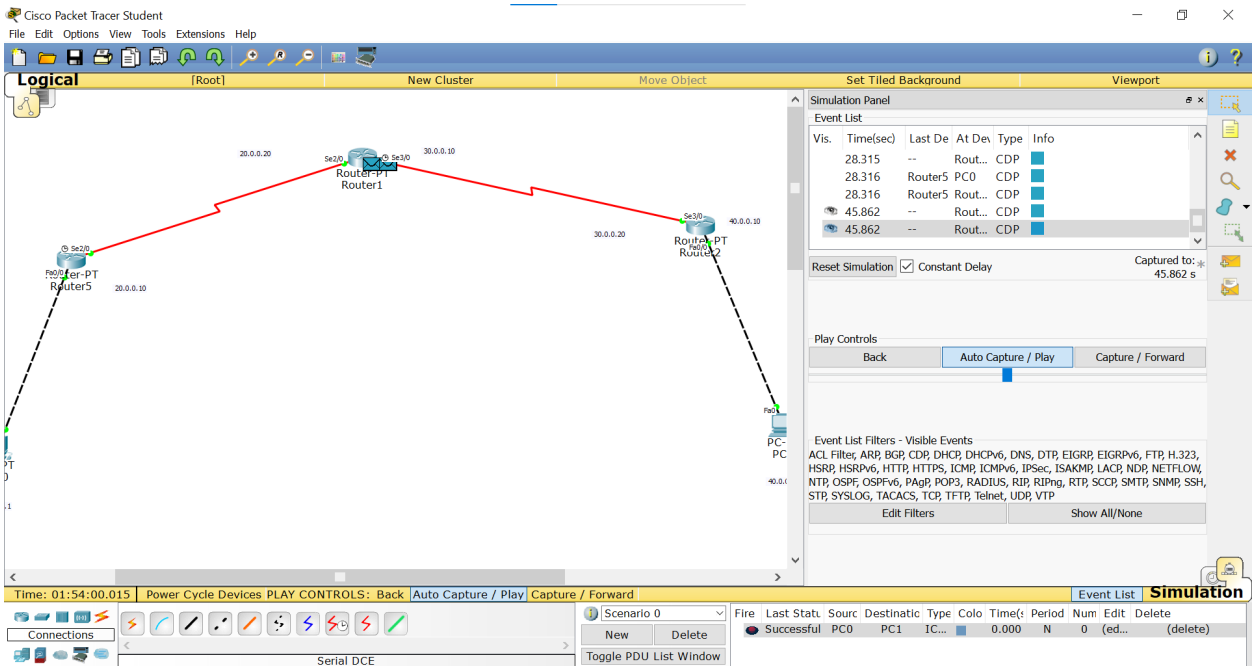




PROGRAM 2.2


PC0
Physical
Config
Desktop
Custom Interface
Command Prompt
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>


PC1
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=2ms TTL=125
Reply from 10.0.0.1: bytes=32 time=8ms TTL=125
Reply from 10.0.0.1: bytes=32 time=2ms TTL=125
Reply from 10.0.0.1: bytes=32 time=2ms TTL=125
Ping statistics for 10.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 8ms, Average = 3ms
PC>


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Router-PT
Router1
Router-PT
Router2
Router-PT
Router5
PC-PC
20.0.0.20
30.0.0.10
30.0.0.20
40.0.0.10
20.0.0.10
Simulation Panel
Event List
Vis. Time(sec) Last De At Dev Type Info
28.315 -- Rout... CDP
28.316 Router5 PC0 CDP
28.316 Router5 Rout... CDP
45.862 -- Rout... CDP
45.862 -- Rout... CDP
Reset Simulation
Constant Delay
Captured to:
45.862 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP
Edit Filters
Show All/None
Time: 01:54:00.015
Power Cycle Devices PLAY CONTROLS: Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Serial DCE
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Statu Sourc Destinatic Type Colo Time(s Period Num Edit Delete
Successful PC0 PC1 IC... 0.000 N 0 (ed... (delete)