

LAB 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:

2) configure IP address to routers in packet tracer
Explore the following messages: ping responses
destination unreachable, request timed out, reply

2a. Aim:- configuring IP address to router and
exploring ping messages.

```
graph LR
    R1((Router R1))
    PC1[PC1]
    PC2[PC2]
    R1 --- Fa0_0[Fa0/0]
    R1 --- Fa1_0[Fa1/0]
    PC1 --- Fa0_0
    PC2 --- Fa1_0
```

IP 10.0.0.1
Def 10.0.0.10
PC1

IP 20.0.0.1
Def 20.0.0.10
PC2

Procedure:-

Step 1:- select Router - PT and place it in workspace

Step 2:- Take 2 and devices as PC - PT and drop
in workspaces

Step 3:- connect FastEthernet 0/0 of PC1 to Fast
0/0 of Router & FastEthernet 0/0 of PC2 to
FastEthernet 0/1 of Router using copper cross-over

Step 4:- Set IP address of PC1 as 10.0.0.1 and PC2
as 20.0.0.1

Step 5:- In settings set Gateways of PC1 as 10.0.0.10
and PC2 as 20.0.0.10

Step 6:- setup the interface of router using the
following steps

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

Router 0. CLI
(press N)

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 fastEthernet 1/0

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

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

C 20.0.0.0/8 is directly connected, FastEthernet 1/0

step 7: observation

Green lights appear on wires when no shut commands are written which indicate that they are ready for data transmission.

Ping output in PC:

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, 0.25 = 1 (25% loss)

Approximate round trip times in milliseconds:

Minimum = 0ms, Maximum = 1ms, Average =

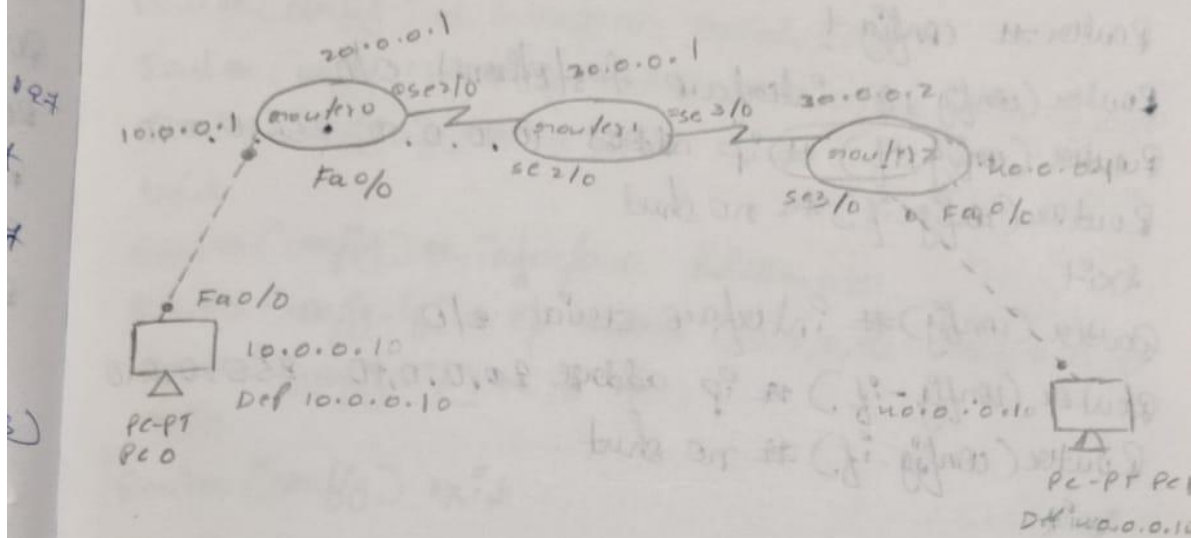
Observation

On pinging in PC for the first time there is a 25% loss

From next ping, there are no losses

26. Aim: configure using 3 routers and 2 PCs

Topology:-



procedure :-

Step 1:- The network is started by selecting and devices PC0 & PC1 i.e. generic PCs and placing them in workspace.

Step 2:- Select 3 Routers - PT & place them as Router 0, Router 1 and Router 2 in workspace.

Step 3:- PC0 & PC1 are connected to Router 0 & Router 2 respectively using copper cross over.

Step 4:- Connect Router 0 to Router 1, Router 1 to Router 2 using.

Step 5:- Set up IP address of PC0 to 10.0.0.1 PC1 to 10.0.0.10 setup gateway of PC0 as 10.0.0.20 and PC1 as 10.0.0.10

configure the 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) # 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



Shot by Honey

realme

realme 9 Pro 5G 2023 08 25 21:37

In Router 2

Router > enable

Router # config t

Router(config) # interface serial 2/0

Router(config-if) # ip address 30.0.0.20 255.0.0.0

Router(config-if) # no shut

exit

Router(config) # interface FastEthernet 0/0

Router(config-if) # ip address 40.0.0.10 255.0.0.0

Router(config-if) # no shut

exit

Router(config) exit

RP Router table:

Router 0:

Router # show ip route

C 20.0.0.0/8 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, serial 2/0

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

Router 2

Router # show ip route

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

C 40.0.0.0/8 is directly connected, FastEthernet 0/0

12
Ping output in PC0

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

Ping statistics for 40.0.0.1:

Packets: sent=4, Received=0, Lost=4 (100% loss)

Observations:-

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

Now configure the router which does not have data of other network. add the network in CL

In all 3 routers. we write config. then route

Router 0:

R0 route 30.0.0.0 255.0.0.0 20.0.0.30

R0 route 40.0.0.0 255.0.0.0 20.0.0.20

Router 1:

R1 ip route 10.0.0.0 255.0.0.0 20.0.0.10

R1 ip route 40.0.0.0 255.0.0.0 30.0.0.20

2.1

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

no ip route table

exit

Router 0

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 30.0.0.0/8 [1/0] via 20.0.0.20

S 40.0.0.0/8 [1/0] via 20.0.0.20

Router 1

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

Router 2

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, FastEthernet 0/0

Ping messages

PC > ping 40.0.0.1

Pinging 40.0.0.1 with 32 bytes of data 14

Request timed out:

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

Reply from 40.0.0.1: bytes = 32 time = 2ms 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 = 2ms, Average = 2ms

Observation:

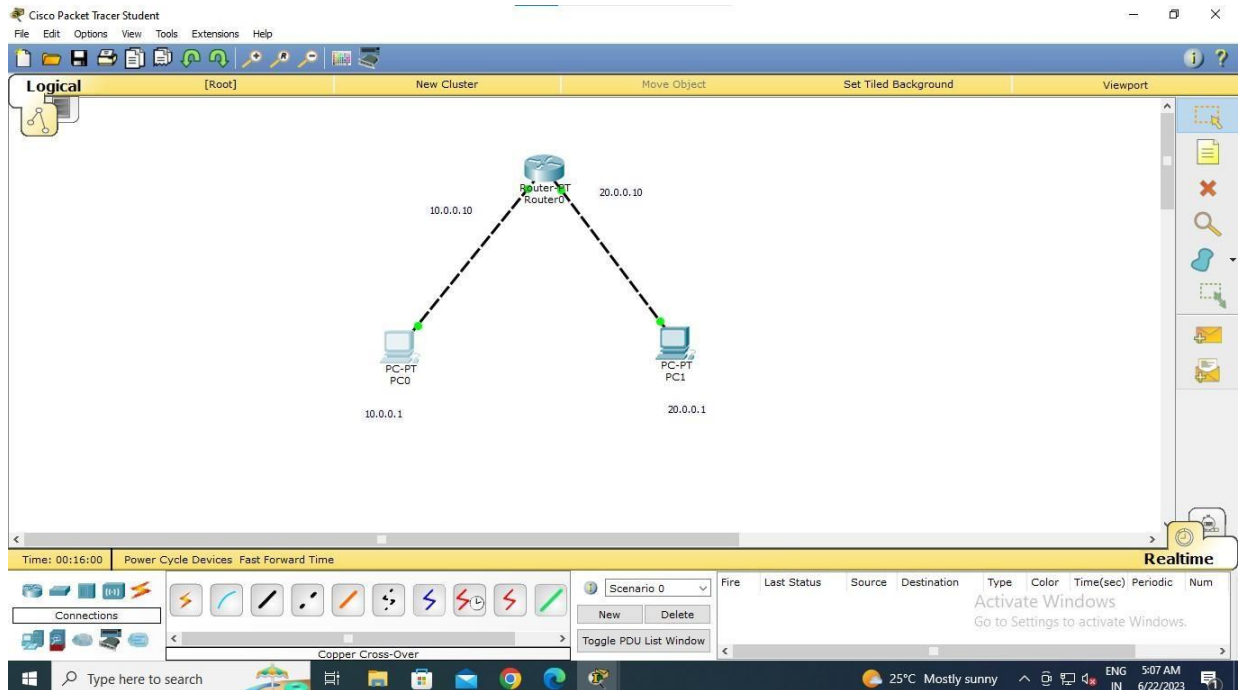
In first ping destination host was unreachable as Router 0 has no knowledge about the network 30.0.0.0 and 40.0.0.0 & the packets got stuck or lost.

After this ip route is explicitly added now on pinging there is 25% loss in first time. the following one's has no loss

True

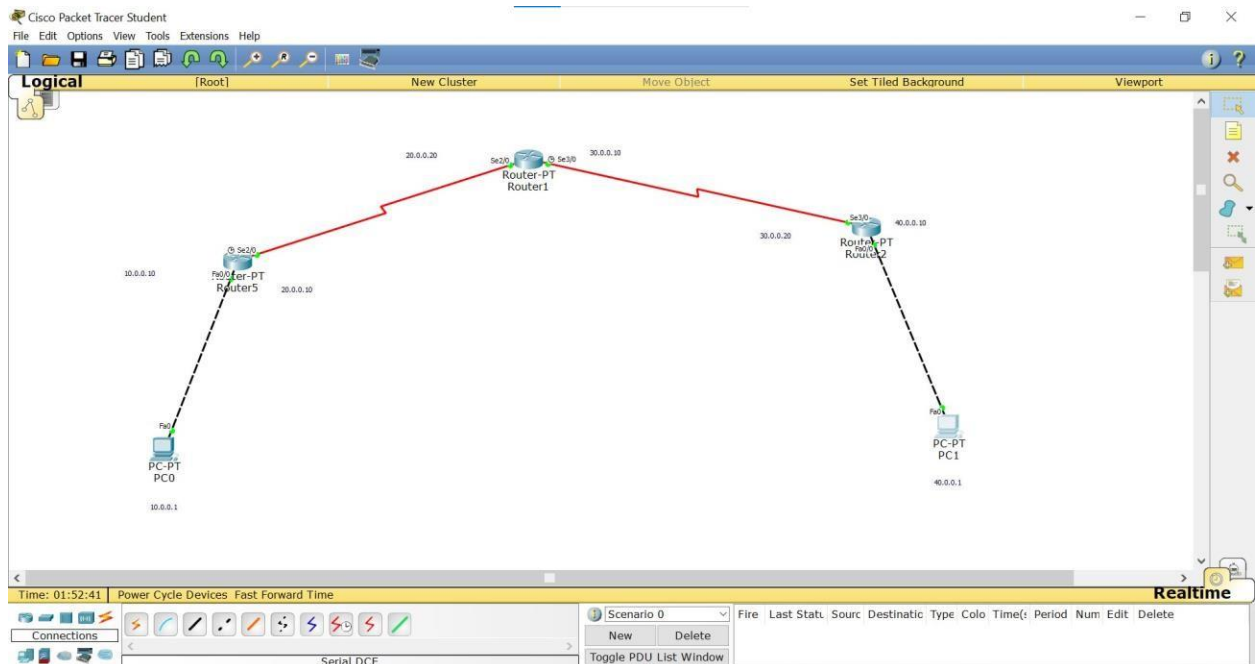
Output :

TOPOLOGY:



PROGRAM 2.1

PROGRAM 2.2



PROGRAM 2.1

The image displays the Cisco Packet Tracer Student interface. The top window shows a Command Prompt for PC0, where a ping command has been executed. The output shows a successful ping with 32 bytes of data, a time of 10ms, and a TTL of 127. The ping statistics for 20.0.0.1 are: Packets: Sent = 4, Received = 3, Lost = 1 (25% loss), Approximate round trip times in milli-seconds: Minimum = 0ms, Maximum = 10ms, Average = 3ms.

The bottom window shows the main Packet Tracer interface. The network diagram consists of a central Router0 connected to two PCs, PC0 and PC1. PC0 is connected to Router0 via a 10.0.0.10 interface, and PC1 is connected via a 20.0.0.10 interface. The Router0 has a 10.0.0.1 interface connected to PC0 and a 20.0.0.1 interface connected to PC1. The Event List panel on the right shows a list of events, including CDP, ARP, and ICMP. The Play Controls panel shows the simulation is running, and the Event List Filters panel shows the visible events.

Command Prompt Output:

```
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>
```

Network Diagram:

```
graph TD
    Router0[Router0] ---|10.0.0.10| PC0[PC-PT PC0]
    Router0 ---|20.0.0.10| PC1[PC-PT PC1]
    PC0 ---|10.0.0.1| Router0
    PC1 ---|20.0.0.1| Router0
```

Event List:

Vis.	Time(sec)	Last Device	At Device	Type	Info
	465.354	Router0	PC1	CDP	
	525.353	--	Router0	CDP	
	525.353	--	Router0	CDP	
	525.354	Router0	PC0	CDP	
	525.354	Router0	PC1	CDP	
	585.355	--	Router0	CDP	
	585.355	--	Router0	CDP	
	585.356	Router0	PC0	CDP	
	585.356	Router0	PC1	CDP	

Play Controls:

Reset Simulation ☒ Constant Delay Captured to: 585.356 s

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, NCP, NETFLOW, NTP, OSPF, OSPFv6, PAgg, PAgg6, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP

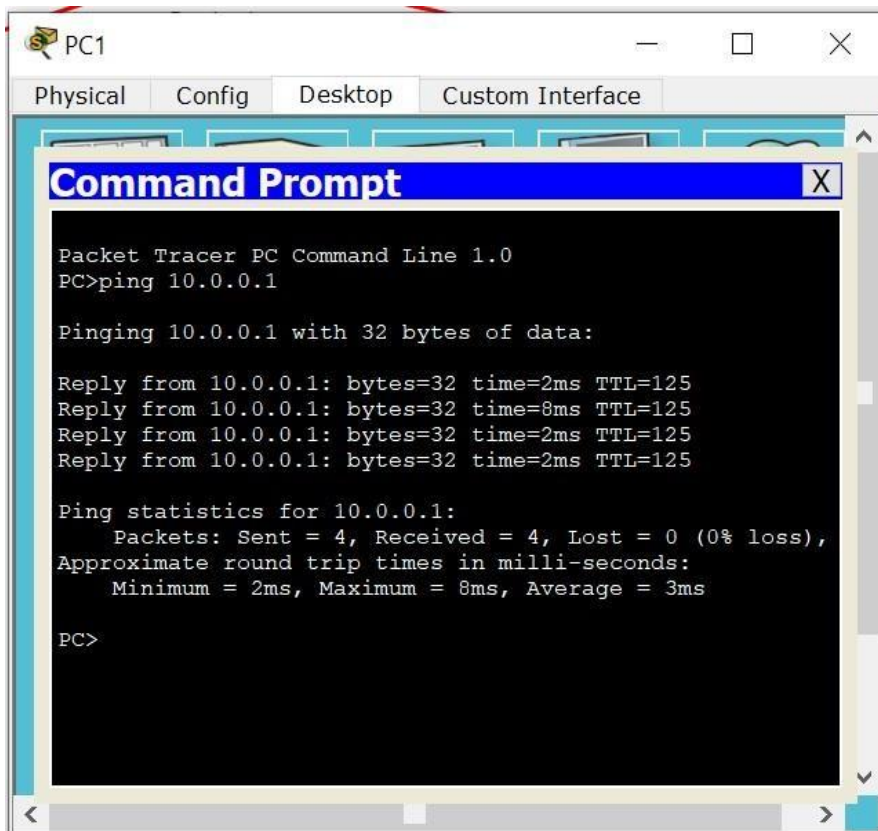
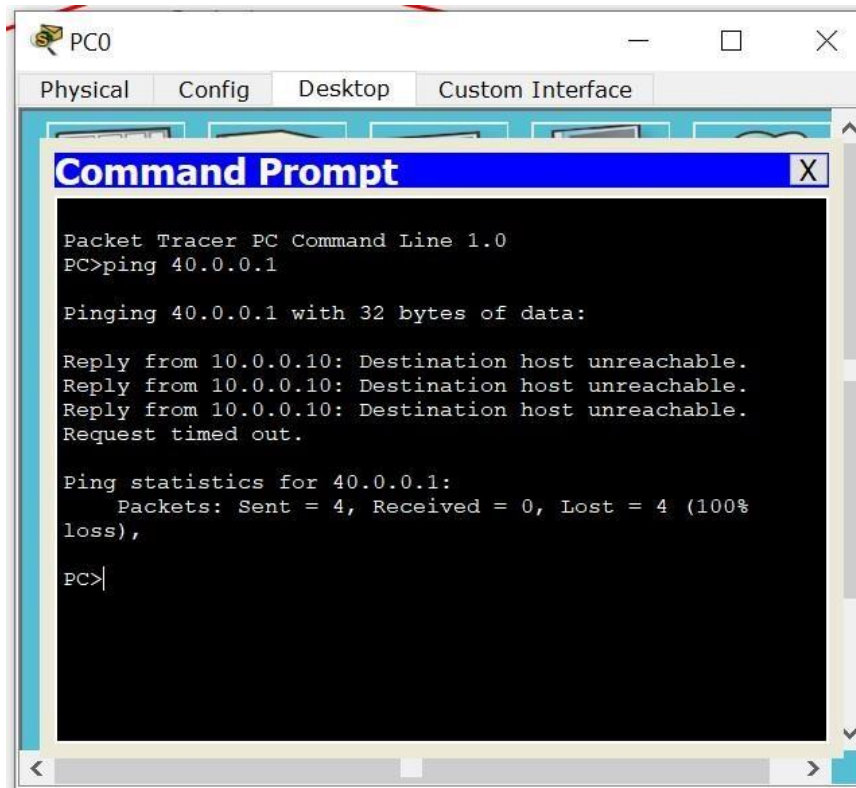
Edit Filters Show All/None

Simulation Panel:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num
	Successful	PC0	PC1	ICMP	Win	0.000	N	0

Go to Settings to activate Windows.

PROGRAM 2.2



Cisco Packet Tracer Student

File Edit Options View Tools Extensions Help

Logical (Root) New Cluster Move Object Set Tiled Background Viewport

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, PAgg, 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 Stat.	Source	Destination	Type	Color	Time(s)	Period	Num	Edit	Delete
●	Successful	PC0	PC1	IC...		0.000	N	0	(ed...	(delete)