1BM18CS122

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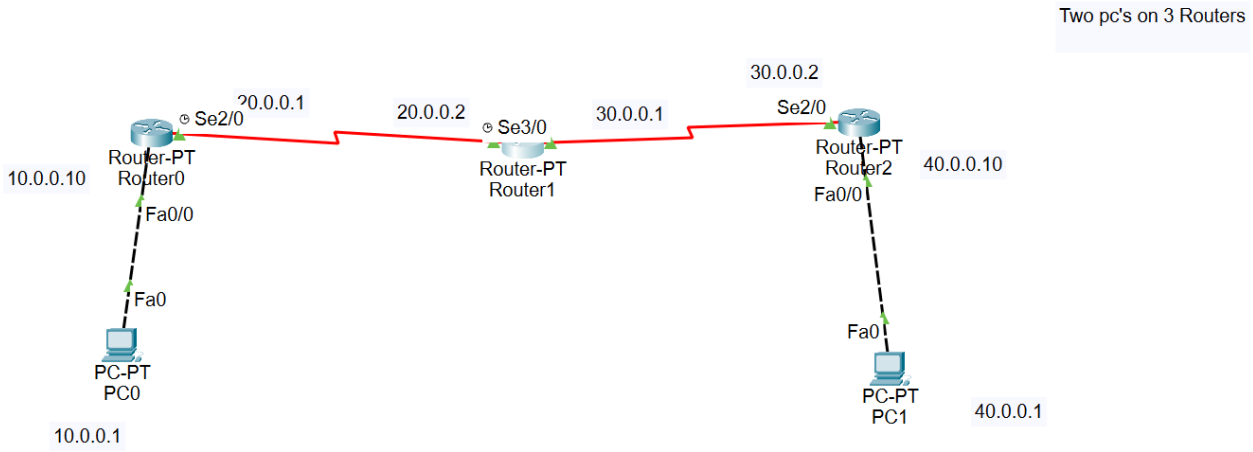
QUESTION: Demonstrating IP Routing by using 3 Routers

AIM: By Using IP Route command, Connect two different Networks over 3 Routers

TOPOLOGY:



PROCEDURE:

1. Connect the two computers to their respective routers
2. Configure the IP and default gateways for the PC's
3. Connect the routers with a DCE cable over Serial Interfaces
4. Configure IP Routing for each Router

CLI COMMANDS – FOR ONE ROUTER –

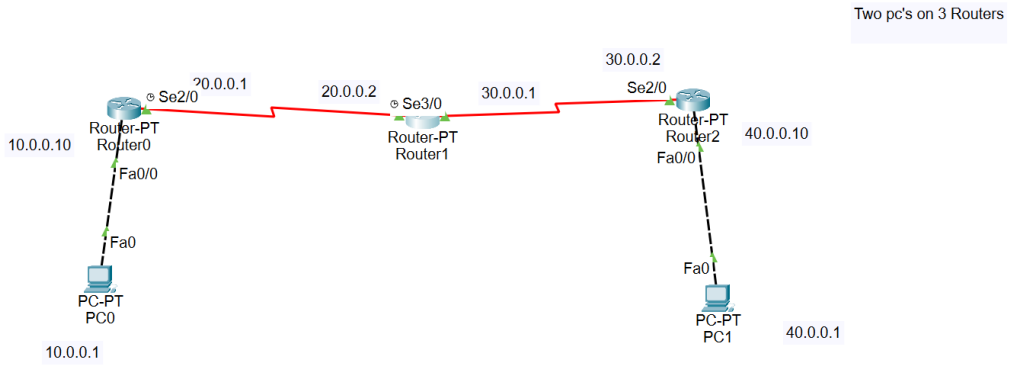
1. config t
2. interface FastEthernet0/0
3. ip address 40.0.0.10 255.0.0.0
4. no shut
5. interface serial2/0
6. ip address 30.0.0.2 255.0.0.0
7. no shut

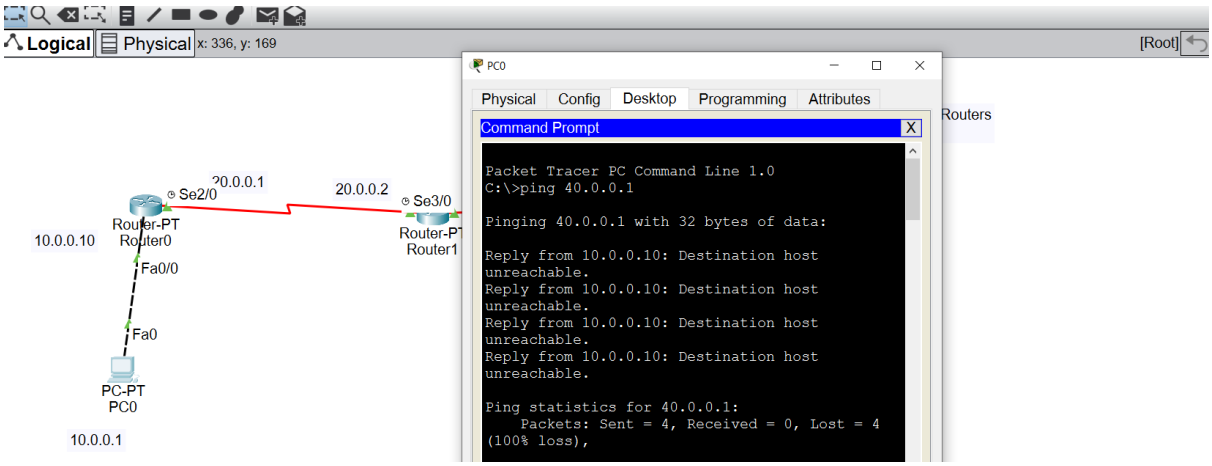
8. show ip route
9. ip route 20.0.0.0 255.0.0.0 30.0.0.1
10. exit

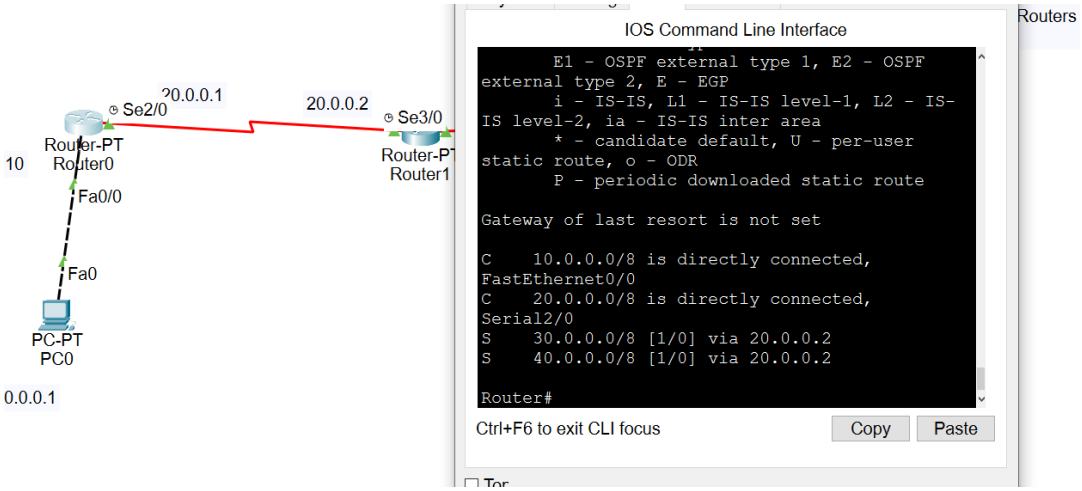
OBSERVATION –

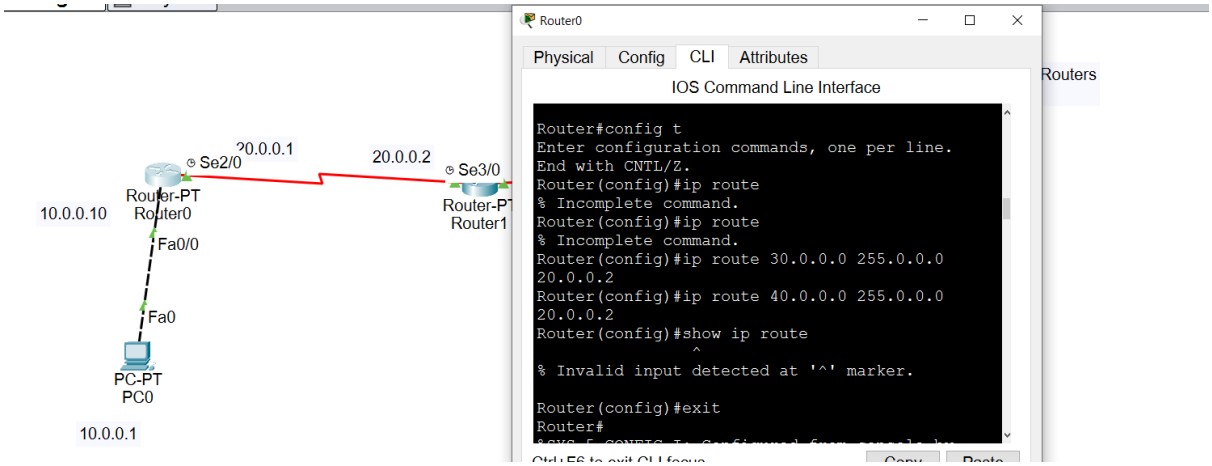
The router forwards the data to said IP range over the Specified Serial Interface of the next router

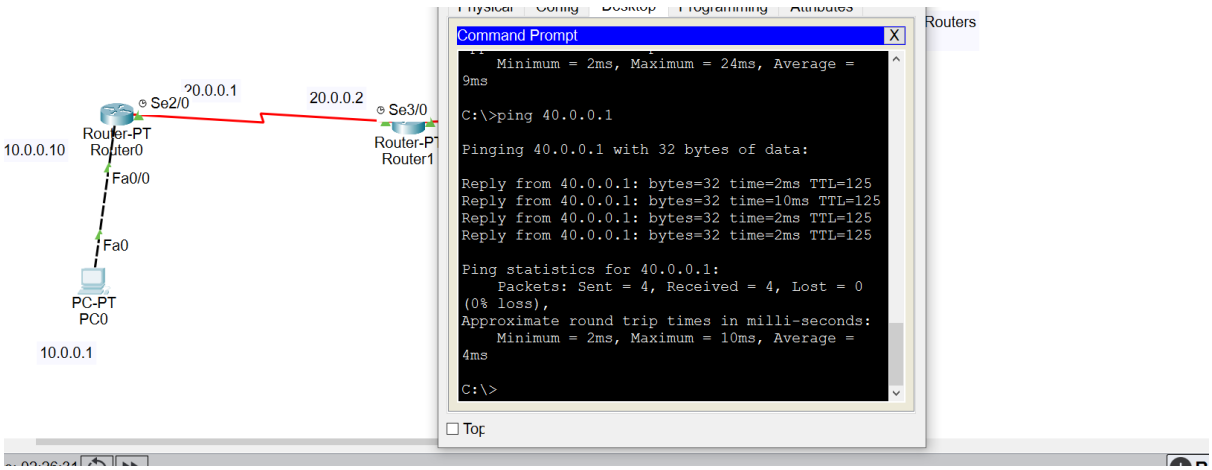
SCREENSHOTS –



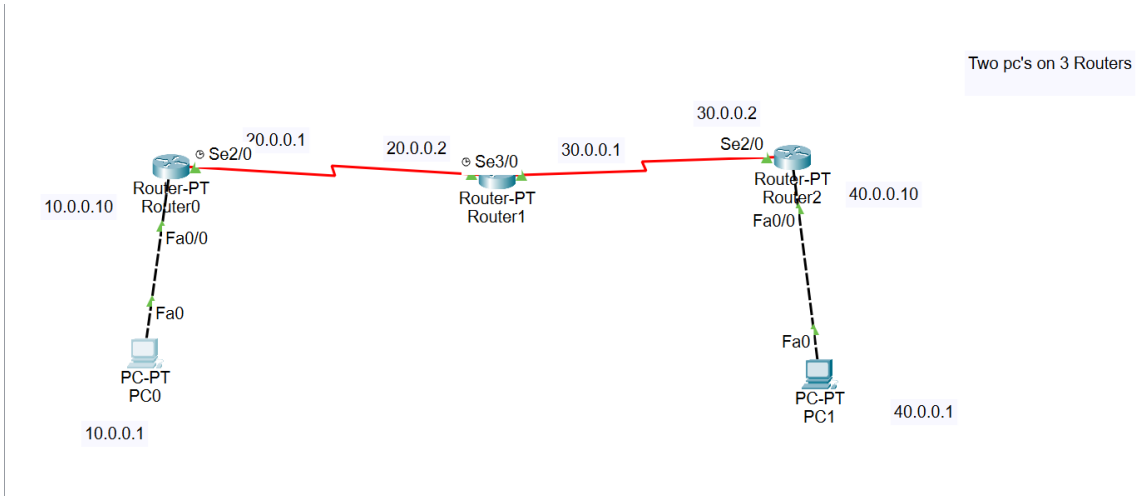



IOS Command Line Interface
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route
Gateway of last resort is not set
C 10.0.0.0/8 is directly connected, FastEthernet0/0
C 20.0.0.0/8 is directly connected, Serial2/0
S 30.0.0.0/8 [1/0] via 20.0.0.2
S 40.0.0.0/8 [1/0] via 20.0.0.2
Router#
Ctrl+F6 to exit CLI focus
Copy
Paste
Routers
20.0.0.1
20.0.0.2
Se2/0
Se3/0
Router-PT Router0
Router-PT Router1
10
Fa0/0
Fa0
PC-PT PC0
0.0.0.1

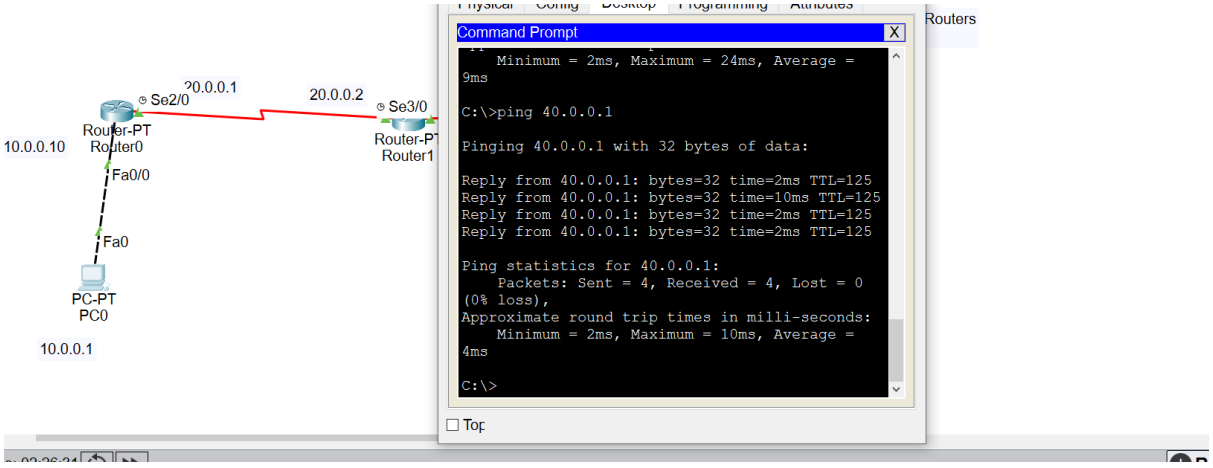

Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router#config t
Enter configuration commands, one per line.
End with CNTL/Z.
Router(config)#ip route
% Incomplete command.
Router(config)#ip route
% Incomplete command.
Router(config)#ip route 30.0.0.0 255.0.0.0 20.0.0.2
Router(config)#ip route 40.0.0.0 255.0.0.0 20.0.0.2
Router(config)#show ip route
^
% Invalid input detected at '^' marker.
Router(config)#exit
Router#
Routers
20.0.0.1
20.0.0.2
Se2/0
Se3/0
Router-PT Router0
Router-PT Router1
10.0.0.10
Fa0/0
Fa0
PC-PT PC0
10.0.0.1


Command Prompt
Minimum = 2ms, Maximum = 24ms, Average = 9ms
C:\>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Reply from 40.0.0.1: bytes=32 time=2ms TTL=125
Reply from 40.0.0.1: bytes=32 time=10ms 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 = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 10ms, Average = 4ms
C:\>
Routers
20.0.0.1
20.0.0.2
Se2/0
Se3/0
Router-PT Router0
Router-PT Router1
10.0.0.10
Fa0/0
Fa0
PC-PT PC0
10.0.0.1

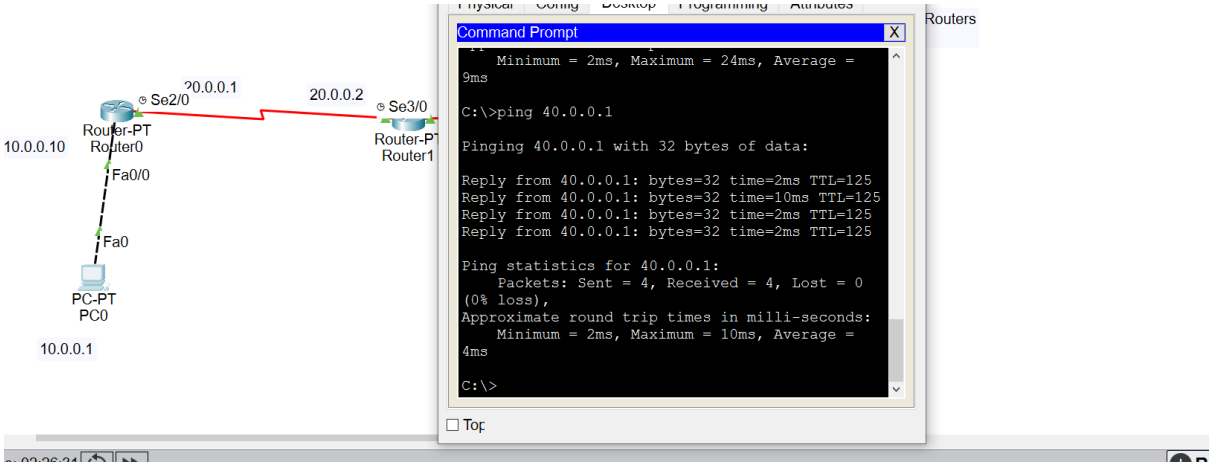
TOPOLOGY

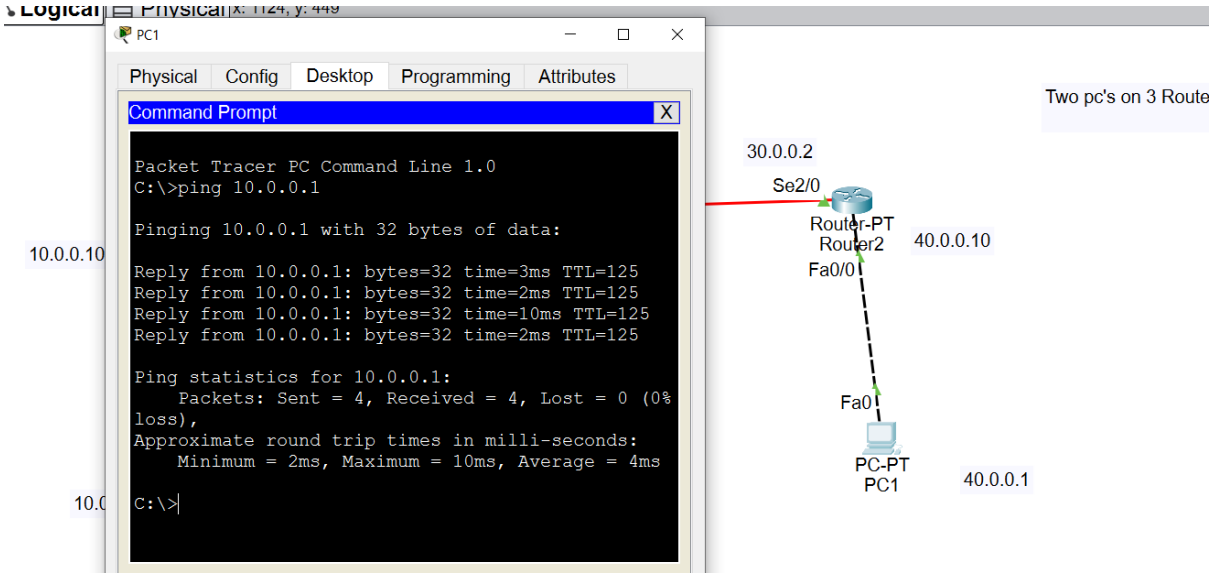


PING



RESULTS


Routers
Command Prompt
Minimum = 2ms, Maximum = 24ms, Average = 9ms
C:\>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Reply from 40.0.0.1: bytes=32 time=2ms TTL=125
Reply from 40.0.0.1: bytes=32 time=10ms 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 = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 10ms, Average = 4ms
C:\>
Top
20.0.0.1
Se2/0
20.0.0.2
Se3/0
Router-PT
Router0
Router-PT
Router1
10.0.0.10
Fa0/0
Fa0
PC-PT
PC0
10.0.0.1


Logical
Physical
PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=3ms TTL=125
Reply from 10.0.0.1: bytes=32 time=2ms TTL=125
Reply from 10.0.0.1: bytes=32 time=10ms 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 = 10ms, Average = 4ms
C:\>
Two pc's on 3 Route
30.0.0.2
Se2/0
Router-PT
Router2
40.0.0.10
Fa0/0
Fa0
PC-PT
PC1
40.0.0.1
10.0.0.10
10.0