Experiment 12

Implementation of Network Address Translation using Packet Tracer

Name : Rahul Goel

Reg no: RA1911030010094

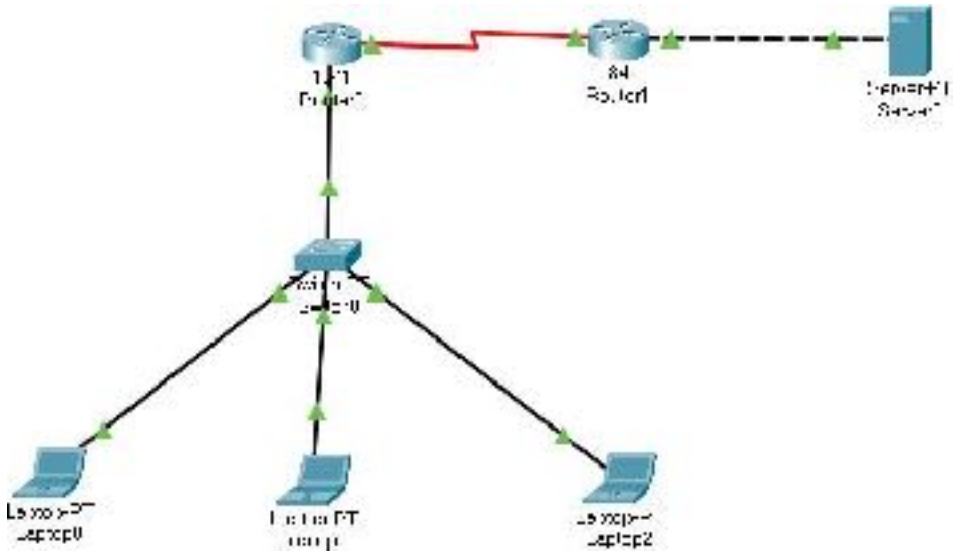
Aim:

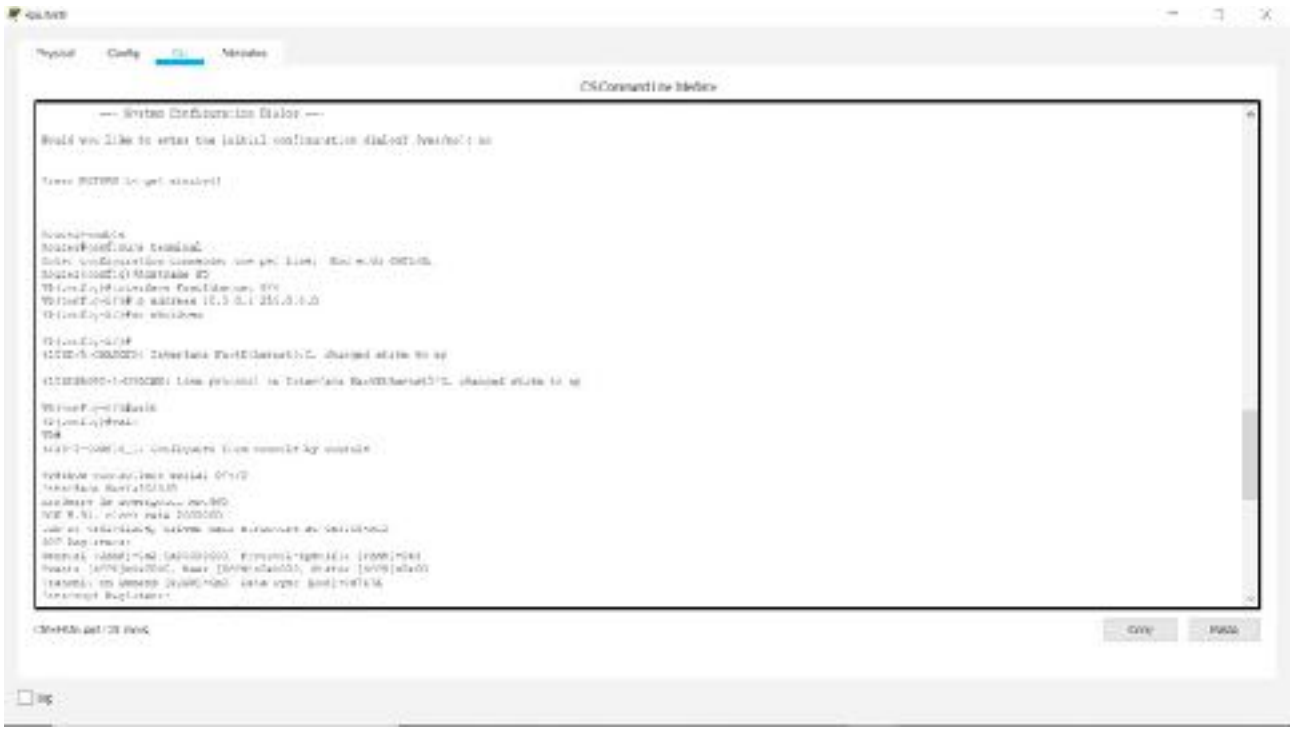
To design a NAT on Cisco Packet Tracer.

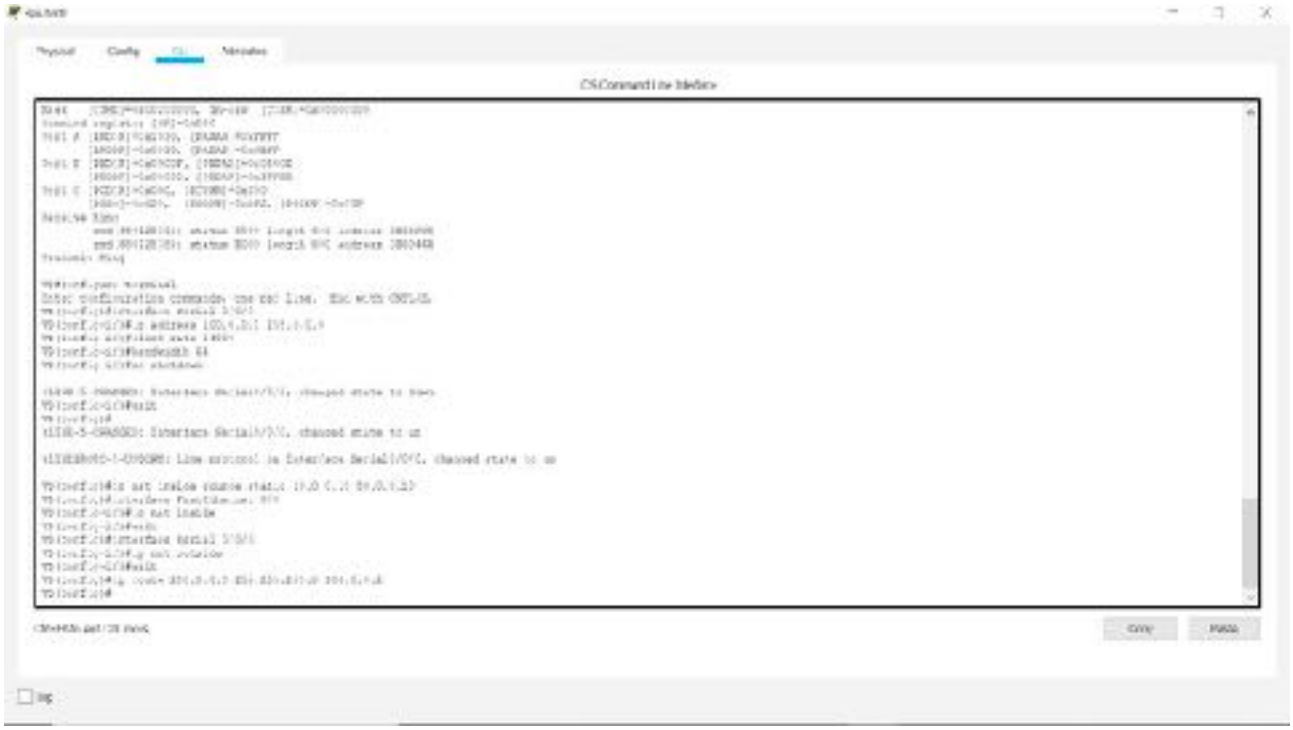
Procedure:

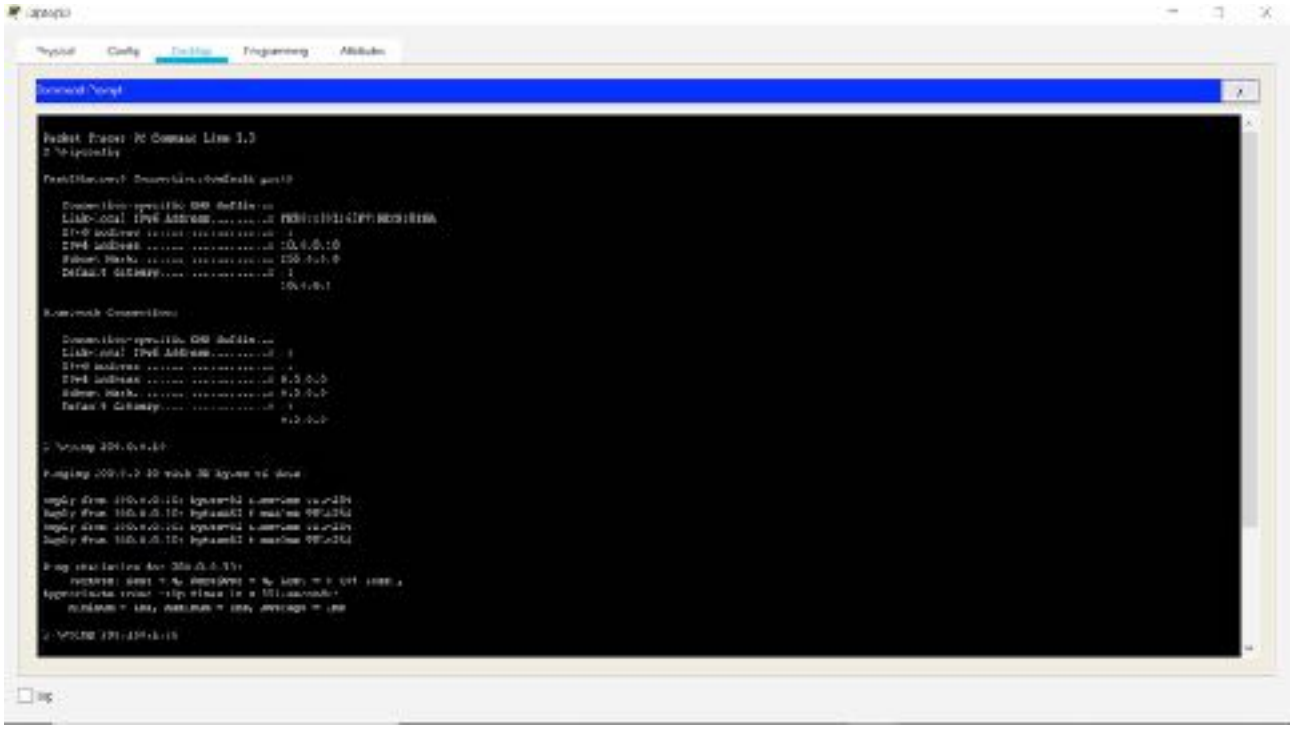
➢Follow steps provided in the given document.

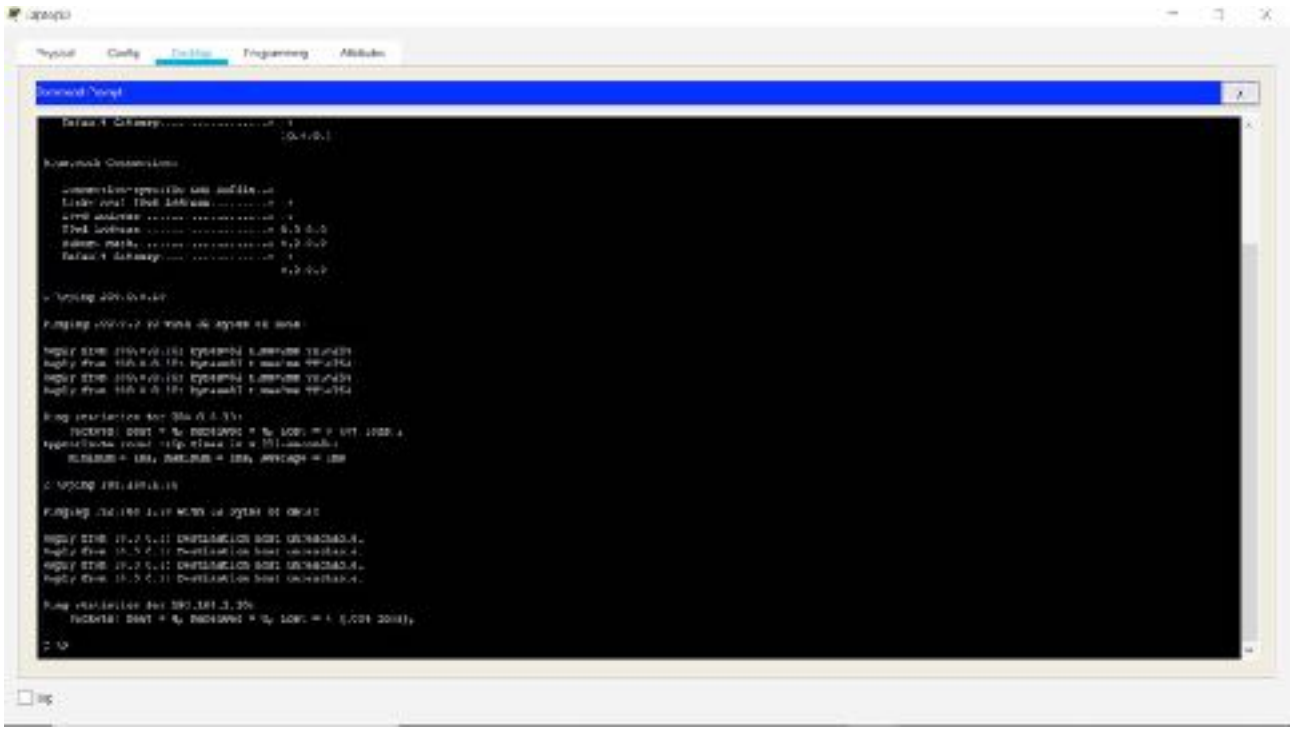
➢Diagram:

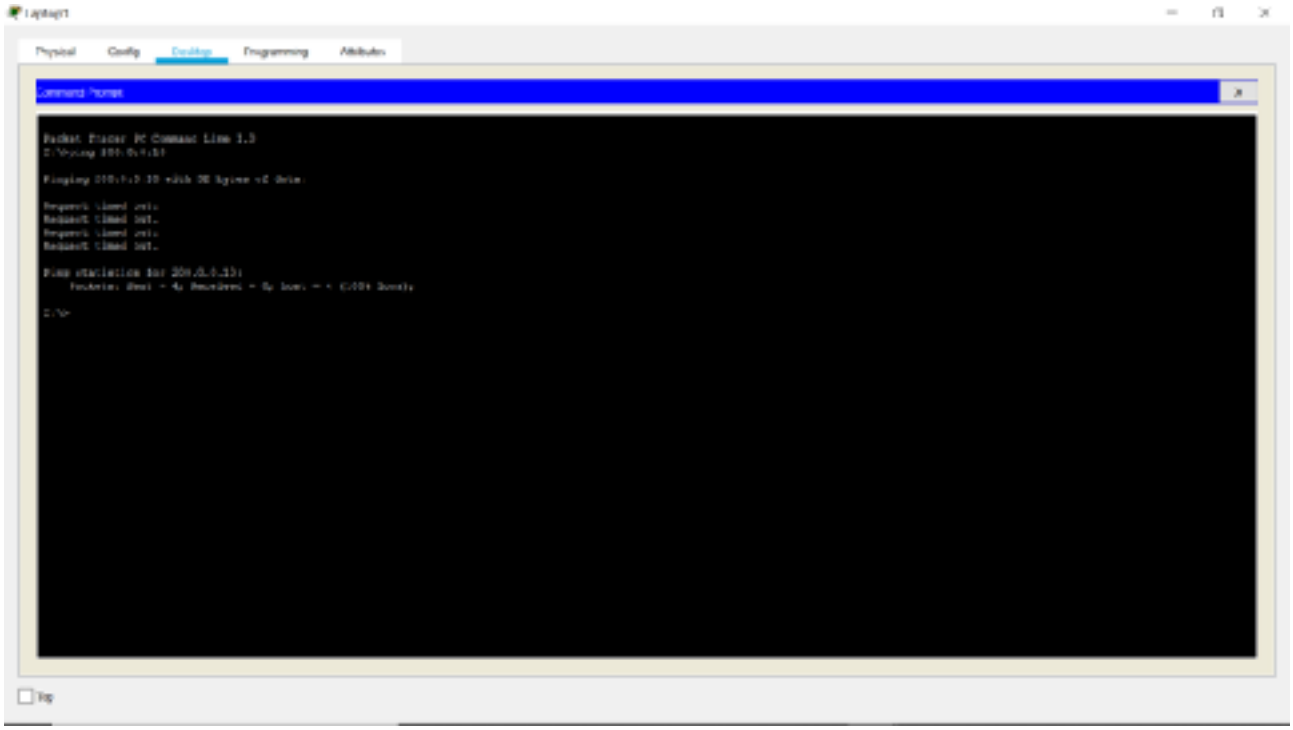


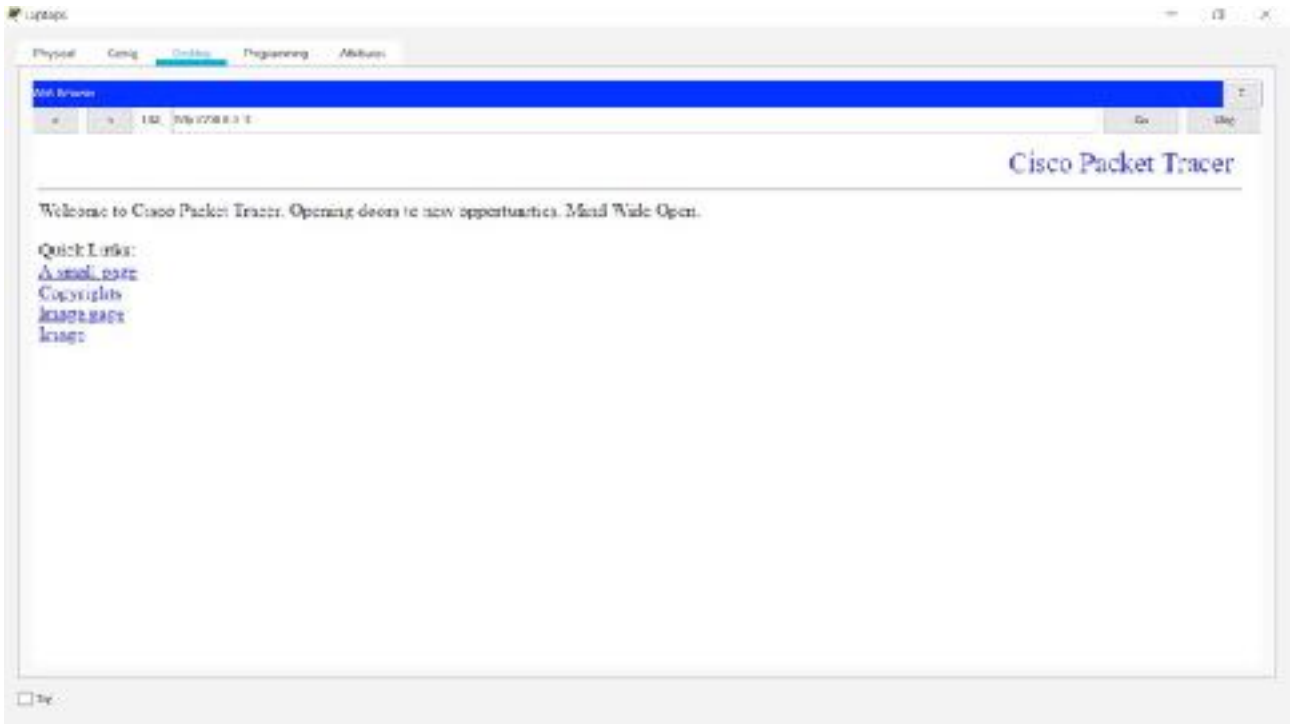


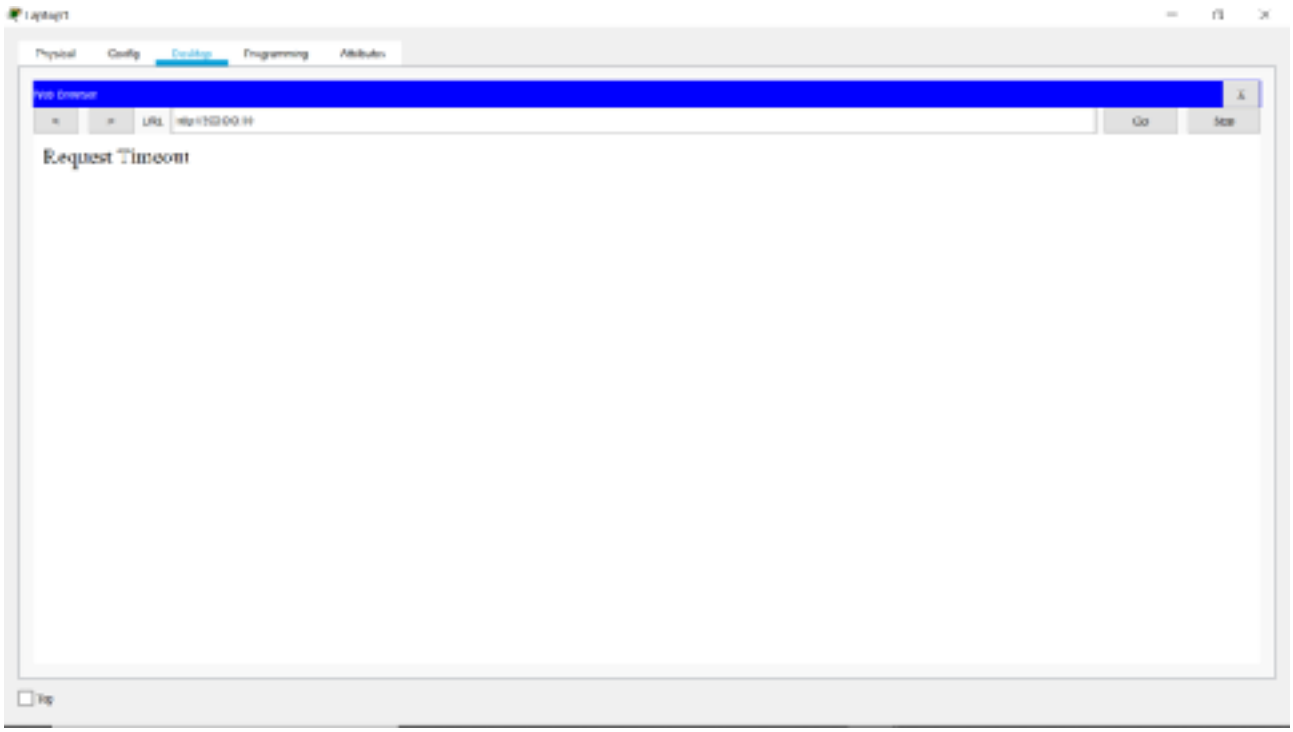









Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
Go
Stop
Cisco Packet Tracer
Welcome to Cisco Packet Tracer. Opening doors to new opportunities. Mind Wide Open.
Quick Links:
A small page
Copyrights
Image page
Image
Top


Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
Go
Stop
Request Timeout
Top

Exp 13: Configure VPN using Packet Tracer

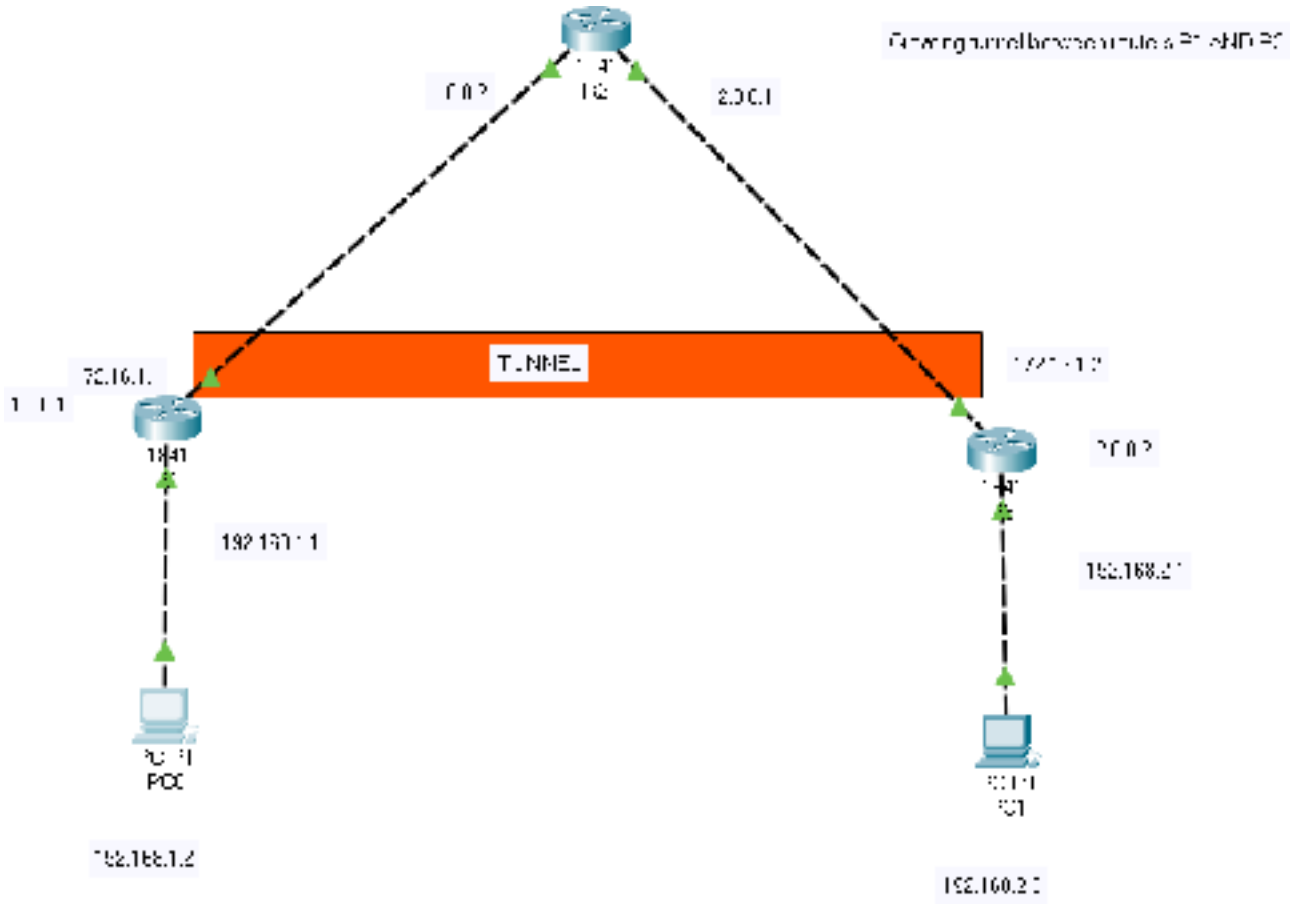
Name: Rahul Goel

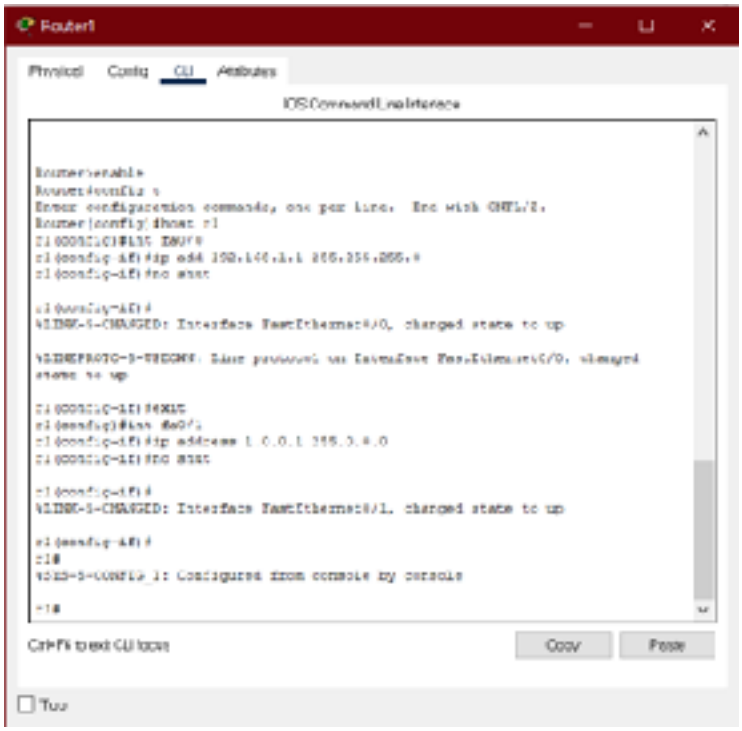
Reg No: RA1911030010094

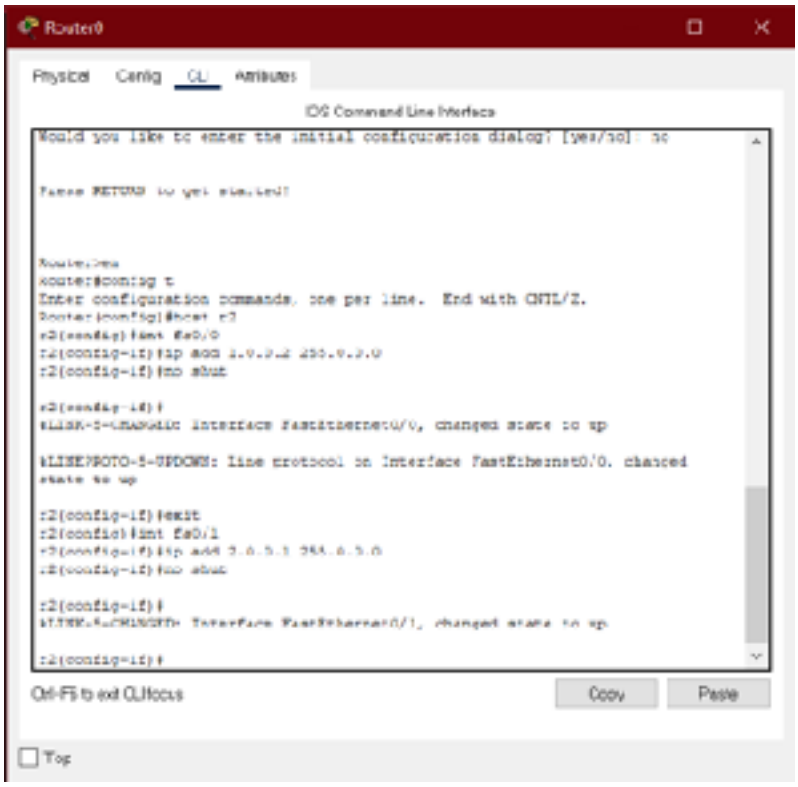
Aim:
To design a NAT on Cisco Packet Tracer.

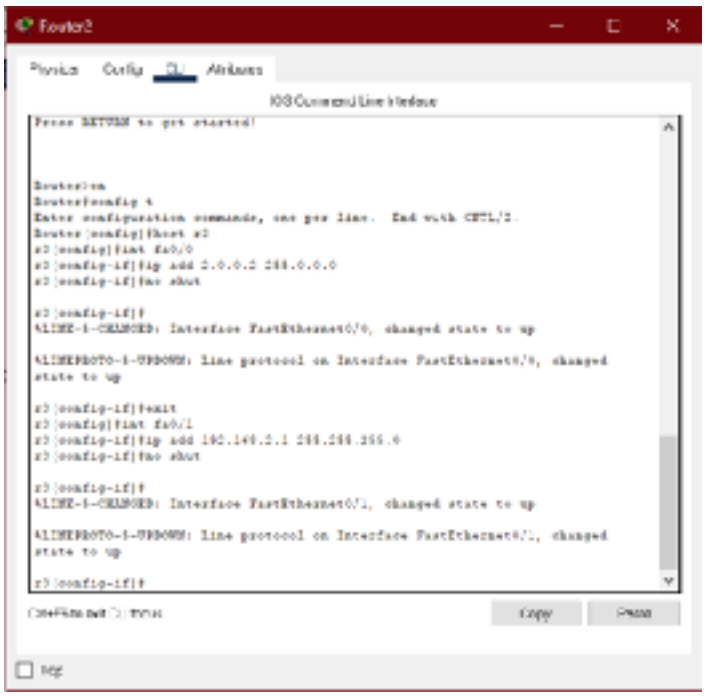
Procedure:
➢ Follow steps provided in the given document.

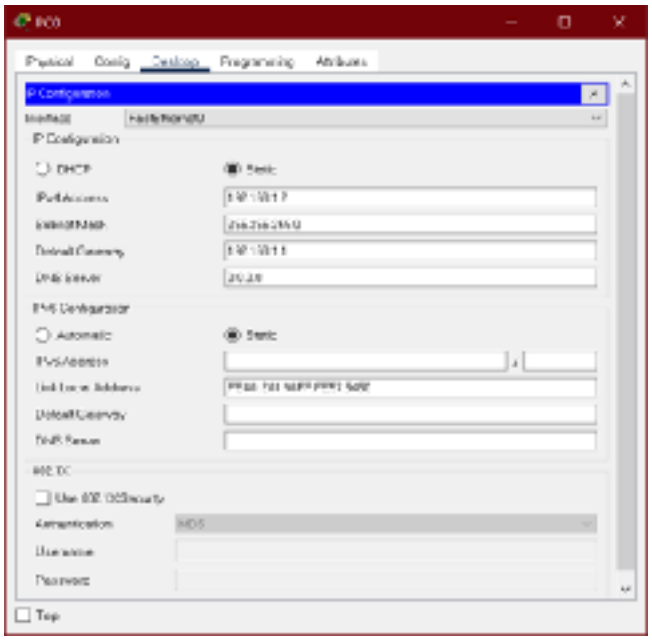
Topology:

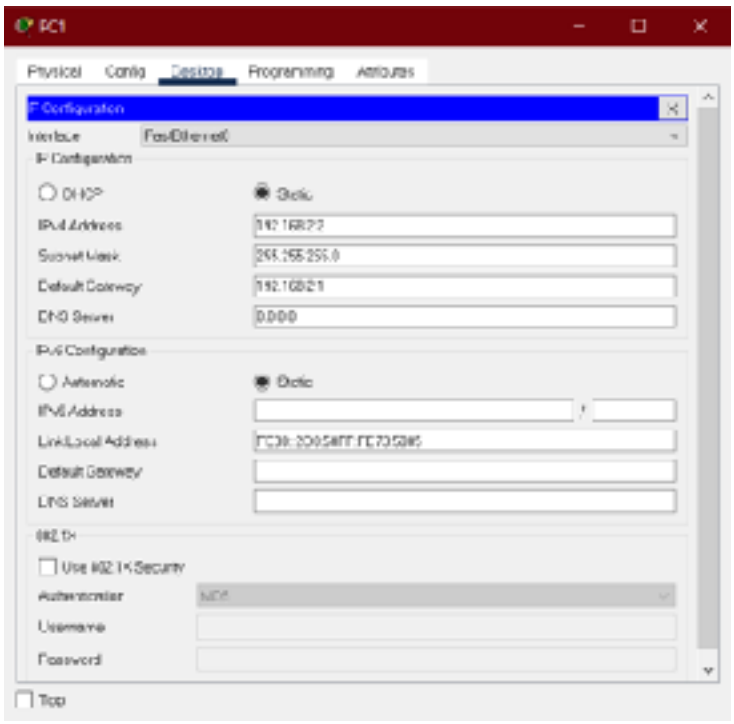


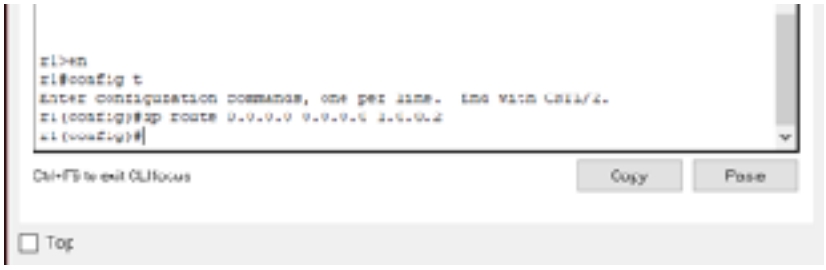

Router1
Physical
Config
CLI
Attributes
IOS Command Line Interface
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

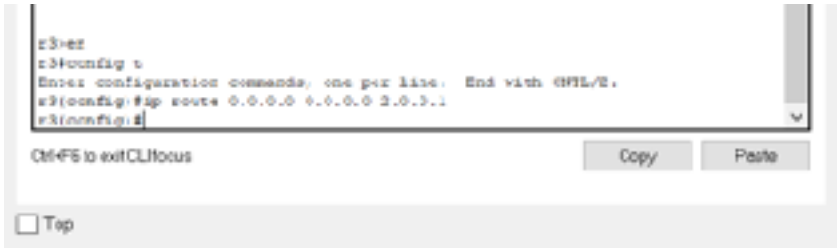

Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Would you like to enter the initial configuration dialog? [yes/no]: no
Press RETURN to get started!
Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#host r2
r2(config)#int fa0/0
r2(config-if)#ip add 2.0.2.2 255.0.2.0
r2(config-if)#no shut
r2(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
r2(config-if)#exit
r2(config)#int fa0/1
r2(config-if)#ip add 2.0.5.1 255.0.5.0
r2(config-if)#no shut
r2(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
r2(config-if)#
Ctrl-F6 to exit CLI focus
Copy
Paste
Top


Router3
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started!
Router>en
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#host r3
r3(config)#int fa0/0
r3(config-if)#ip add 2.0.0.2 255.0.0.0
r3(config-if)#no shut
r3(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
r3(config-if)#exit
r3(config)#int fa0/1
r3(config-if)#ip add 192.168.2.1 255.255.255.0
r3(config-if)#no shut
r3(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
r3(config-if)#
Top
Copy
Paste

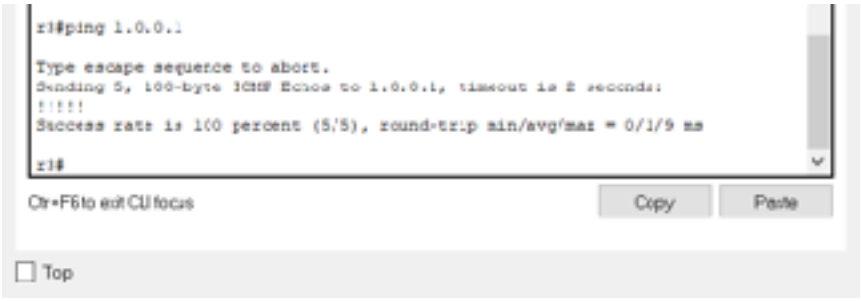

PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
DHCP
Static
IPv4 Configuration
Automatic
Static
Top

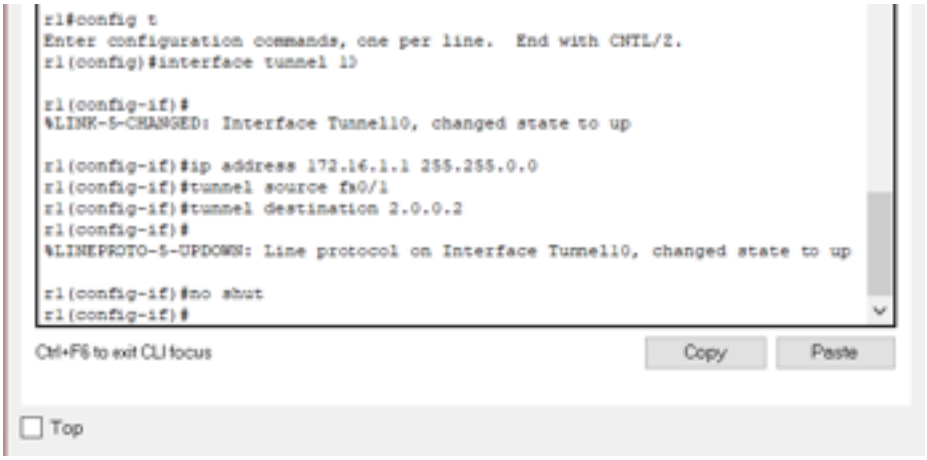

PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet
DHCP
Static
IPv4 Address
Subnet Mask
Default Gateway
DNS Server
IPv6 Configuration
Autoconfig
Static
IPv6 Address
Link Local Address
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

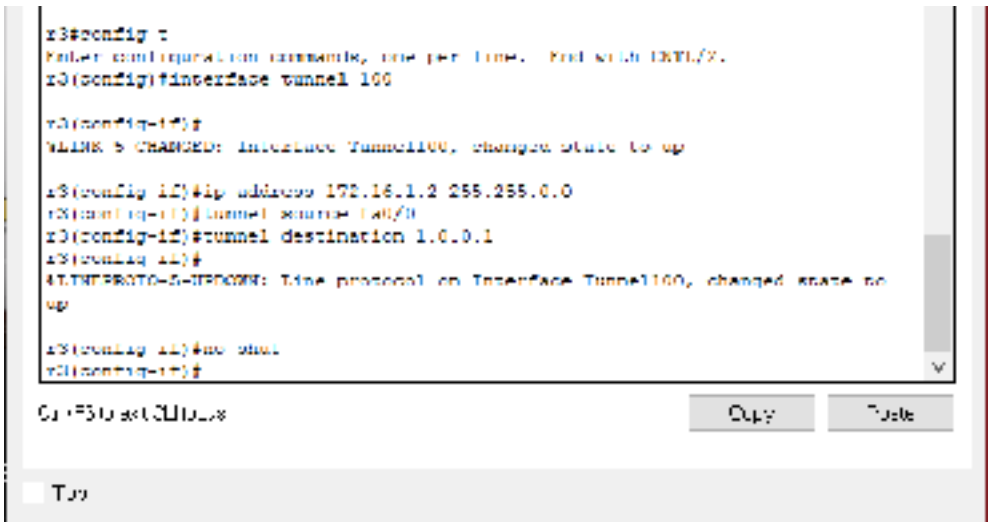

r1>en
r1#config t
Enter configuration commands, one per line. End with CNTL/Z.
r1(config)#ip route 0.0.0.0 0.0.0.0 2.0.0.2
r1(config)#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

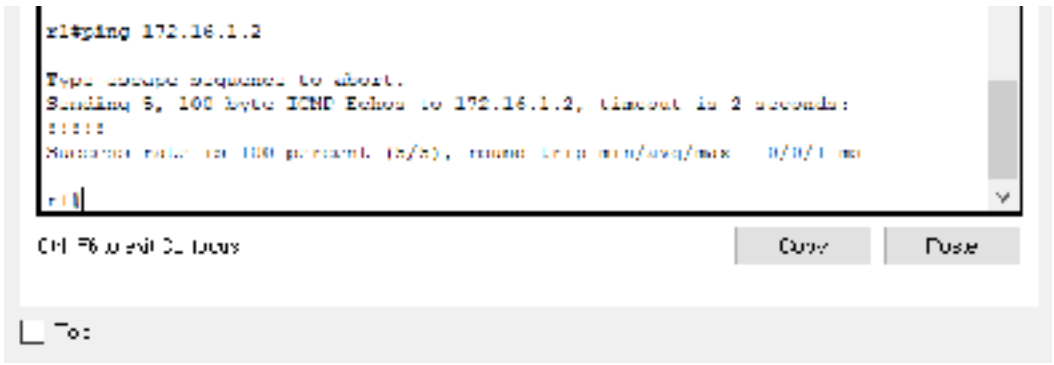

r3>en
r3#config t
Enter configuration commands, one per line. End with CNTL/Z.
r3(config)#ip route 0.0.0.0 0.0.0.0 3.0.0.1
r3(config)#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

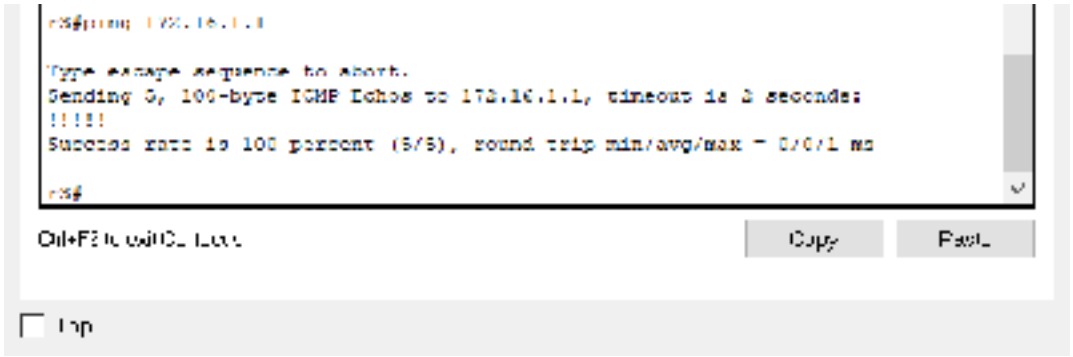

r1#ping 2.0.0.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.0.0.2, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/1 ms
r1#ping 2.0.0.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.0.0.3, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms
r1#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

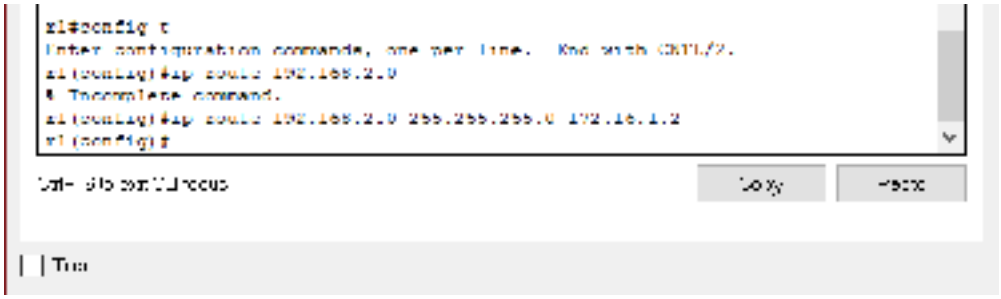

r1#ping 1.0.0.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.0.0.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/1/9 ms
r1#
Ctr+F6 to exit CLI focus
Copy
Paste
Top

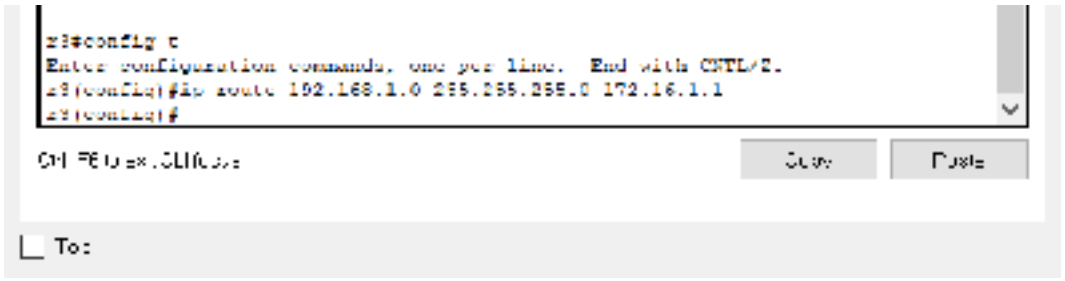

r1#config t
Enter configuration commands, one per line. End with CNTL/Z.
r1(config)#interface tunnel 10
r1(config-if)#
%LINK-5-CHANGED: Interface Tunnel10, changed state to up
r1(config-if)#ip address 172.16.1.1 255.255.0.0
r1(config-if)#tunnel source fa0/1
r1(config-if)#tunnel destination 2.0.0.2
r1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Tunnel10, changed state to up
r1(config-if)#no shut
r1(config-if)#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

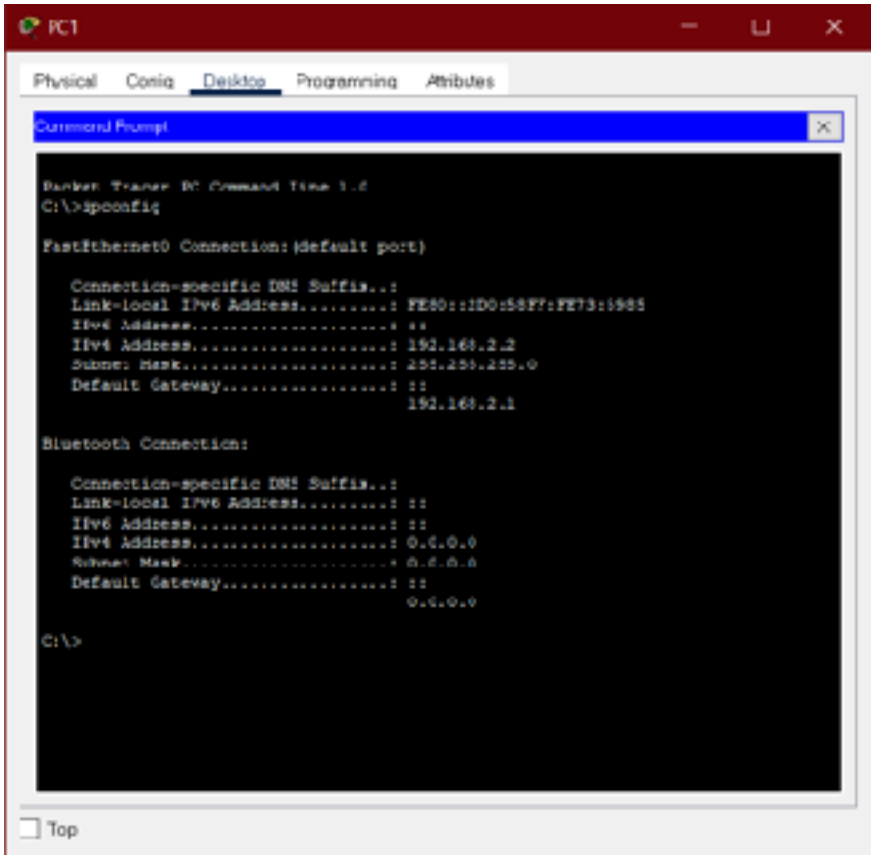

r3#config t
r3(config)#interface tunnel 100
r3(config-if)#
%LINK-5-CHANGED: Interface Tunnel100, changed state to up
r3(config-if)#ip address 172.16.1.2 255.255.0.0
r3(config-if)#tunnel source fa0/0
r3(config-if)#tunnel destination 1.0.0.1
r3(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface Tunnel100, changed state to up
r3(config-if)#no shut
r3(config-if)#
Copy
Paste

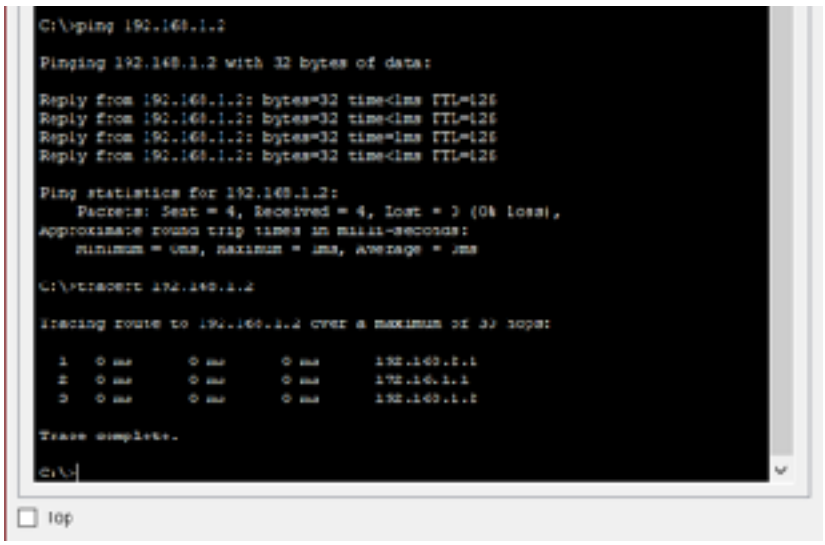

r1#ping 172.16.1.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.1.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/1 ms
r1#
Copy
Paste

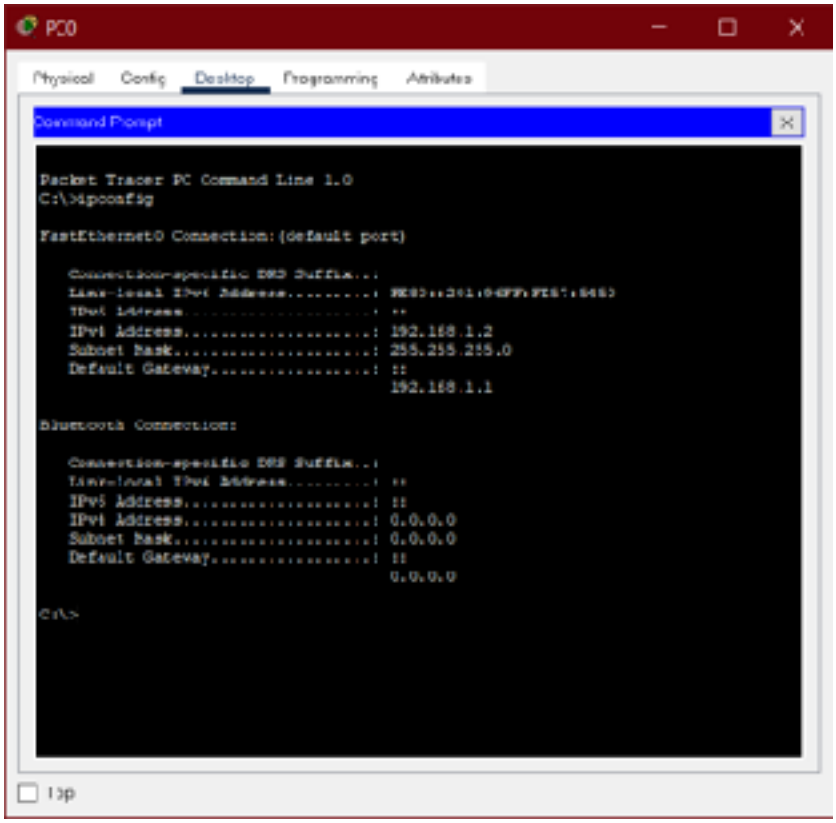

r3#ping 172.16.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/1 ms
r3#
Copy
Paste

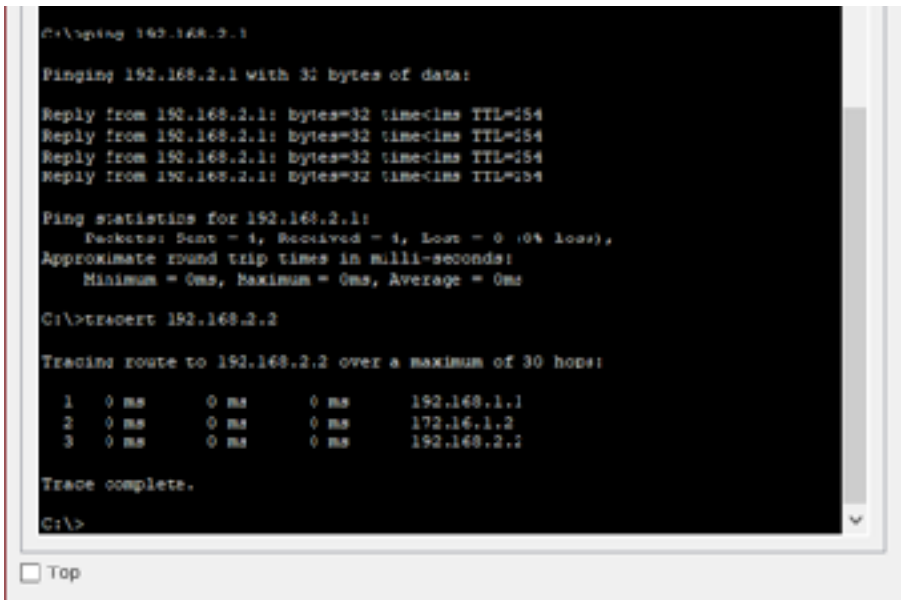

r1#config t
Enter configuration commands, one per line. End with CNTL/Z.
r1(config)#ip route 192.168.2.0
% Incomplete command.
r1(config)#ip route 192.168.2.0 255.255.255.0 172.16.1.2
r1(config)#
Copy
Paste
Top

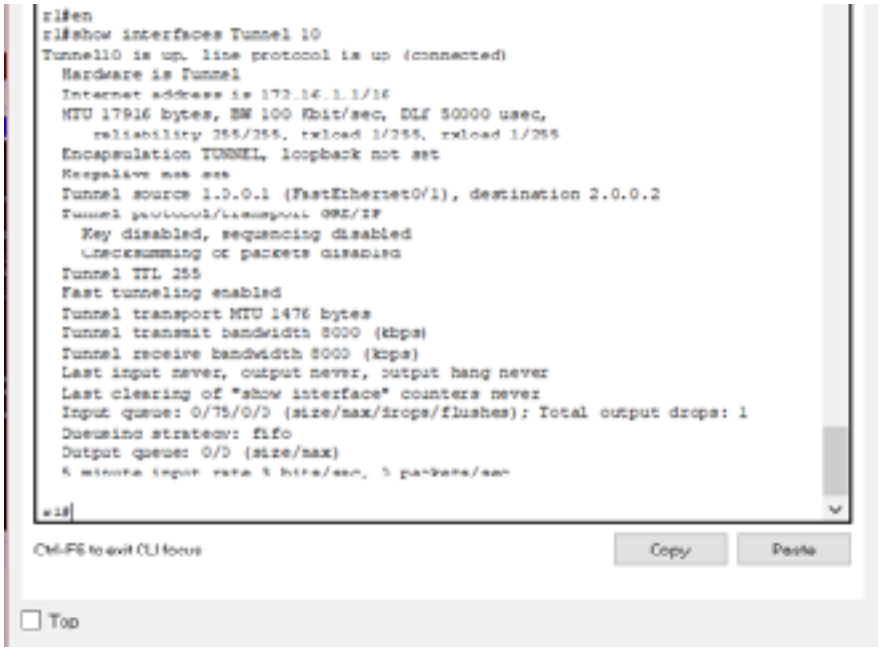

r2#config t
Enter configuration commands, one per line. End with CNTL/Z.
r2(config)#ip route 192.168.1.0 255.255.255.0 172.16.1.1
r2(config)#
Copy
Paste
Top

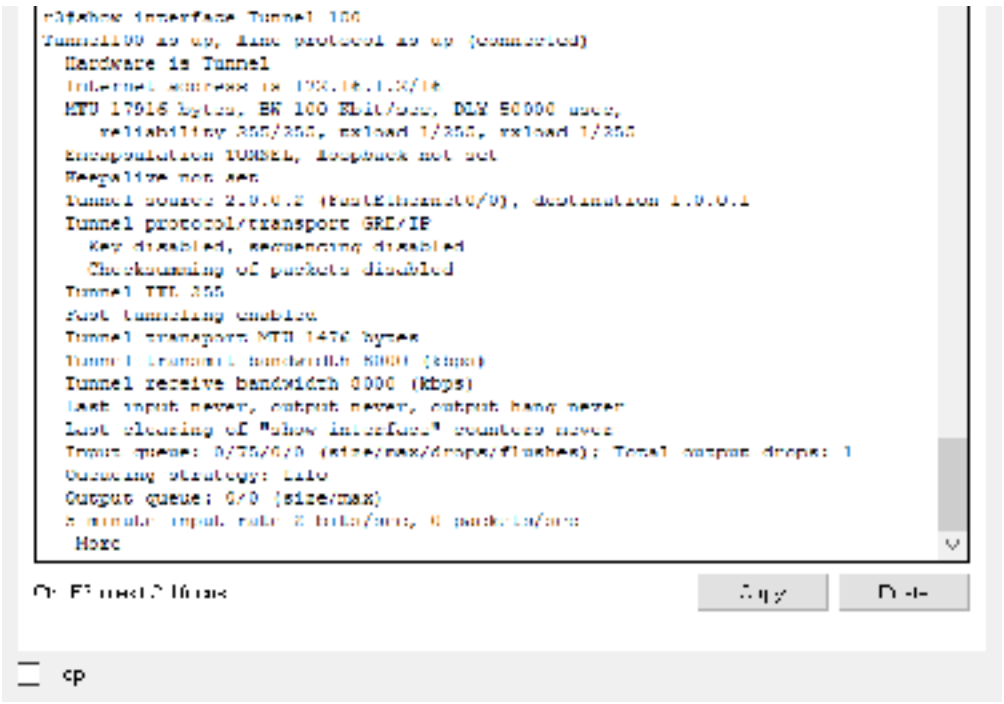

PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::2D0:58FF:FE73:1985
IPv6 Address.....: ::
IPv4 Address.....: 192.168.2.2
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
192.168.2.1
Bluetooth Connection:
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
0.0.0.0
C:\>
Top


C:\>ping 192.168.1.2
Pinging 192.168.1.2 with 32 bytes of data:
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.1.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>tracert 192.168.1.2
Tracing route to 192.168.1.2 over a maximum of 30 hops:
1 0 ms 0 ms 0 ms 192.168.1.1
2 0 ms 0 ms 0 ms 192.168.1.1
3 0 ms 0 ms 0 ms 192.168.1.1
Trace complete.
C:\>


PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Packet Tracer PC Command Line 1.0
C:\>ipconfig
FastEthernet0 Connection:(default port)
IPv6 Address.....: ::
IPv4 Address.....: 192.168.1.2
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
192.168.1.1
Bluetooth Connection:
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
0.0.0.0
C:\>


C:\>ping 192.168.2.1
Pinging 192.168.2.1 with 32 bytes of data:
Reply from 192.168.2.1: bytes=32 time<1ms TTL=254
Reply from 192.168.2.1: bytes=32 time<1ms TTL=254
Reply from 192.168.2.1: bytes=32 time<1ms TTL=254
Reply from 192.168.2.1: bytes=32 time<1ms TTL=254
Ping statistics for 192.168.2.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>tracert 192.168.2.2
Tracing route to 192.168.2.2 over a maximum of 30 hops:
1 0 ms 0 ms 0 ms 192.168.1.1
2 0 ms 0 ms 0 ms 172.16.1.2
3 0 ms 0 ms 0 ms 192.168.2.2
Trace complete.
C:\>
Top


r1#en
r1#show interfaces Tunnel 10
Tunnel10 is up, line protocol is up (connected)
Hardware is Tunnel
Internet address is 172.16.1.1/16
MTU 17916 bytes, BW 100 Kbit/sec, DLY 50000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation TUNNEL, loopback not set
Keepalive not set
Tunnel source 1.0.0.1 (FastEthernet0/1), destination 2.0.0.2
Tunnel protocol/transport GRE/IP
Key disabled, sequencing disabled
Checksumming of packets disabled
Tunnel TTL 255
Fast tunneling enabled
Tunnel transport MTU 1476 bytes
Tunnel transmit bandwidth 8000 (kbps)
Tunnel receive bandwidth 8000 (kbps)
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 1
Queueing strategy: fifo
Output queue: 0/0 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
r1#
Ctrl-F6 to exit CLI focus
Copy
Paste
Top


R1#show interface Tunnel 100
Tunnel100 is up, line protocol is up (connected)
Hardware is Tunnel
Internet address is 100.10.1.0/16
MTU 17916 bytes, BW 100 Kbit/sec, DLY 50000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation TUNNEL, loopback not set
Keepalive not set
Tunnel source 2.0.0.2 (FastEthernet0/0), destination 1.0.0.1
Tunnel protocol/transport GRE/IP
Key disabled, sequencing disabled
Checksumming of packets disabled
Tunnel TTL 255
Fast tunneling enabled
Tunnel transport MTU 1476 bytes
Tunnel transmit bandwidth 8000 (kbps)
Tunnel receive bandwidth 8000 (kbps)
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 1
Queueing strategy: fifo
Output queue: 0/0 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
More

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