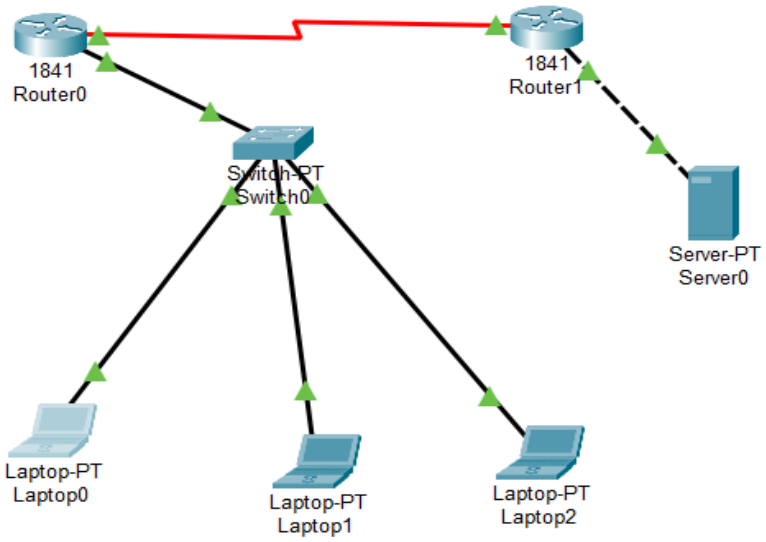
Experiment -3 **Date:4/08/2025**

Configure Static NAT in Cisco Packet Tracer

In order to configure NAT we have to understand four basic terms; inside local, inside global, outside local and outside global. These terms define which address will be mapped with which address.



Initial IP Configuration:

DEVICE/INTERFACE	IP ADDRESS	CONNECTED WITH
Laptop0	10.0.0.10/8	Fa0/0 of R0
Laptop1	10.0.0.20/8	Fa0/0 of R0
Laptop2	10.0.0.30/8	Fa0/0 of Ro
Server0	192.168.1.10/24	Fa0/0 of R1
Serial 0/0/0 of R1	100.0.0.1/8	Serial 0/0/0 of R2
Serial 0/0/0 of R2	100.0.0.2/8	Serial 0/0/0 of R2

To configure IP address in Router1 click Router1 and select CLI and press Enter key.

Router> enable

Router# configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Before we configure IP address in interfaces let's assign a unique descriptive

name to router.

Router(config)#hostname R1

R1(config)#interface FastEthernet0/0

R1(config-if)#ip address 10.0.0.1 255.0.0.0

R1(config-if)#no shutdown

R1(config-if)#exit

R1(config)#exit

R1#show controllers serial 0/0/0

Interface Serial0/0/0

Hardware is PowerQUICC MPC860

DCE V.35, clock rate 2000000

Let’s assign IP address to serial interface.

R1#configure terminal

R1(config)#interface Serial0/0/0

R1#configure terminal

R1(config)#interface Serial0/0/0

R1(config-if)#ip address 100.0.0.1 255.0.0.0

R1(config-if)#clock rate 64000

R1(config-if)#bandwidth 64

R1(config-if)#no shutdown

R1(config-if)#exit

Initial IP configuration in R2

Router> enable

Router# configure terminal

Router(config)#hostname R2

R2(config)#interface FastEthernet0/0

R2(config-if)#ip address 192.168.1.1 255.255.255.0

R2(config-if)#no shutdown

R2(config-if)#exit

R2(config)#interface Serial0/0/0

R2(config-if)#ip address 100.0.0.2 255.0.0.0

R2(config-if)#no shutdown

R2(config-if)#exit

Configure Static NAT

Static NAT configuration requires three steps: -

1. Define IP address mapping

2. Define inside local interface

3. Define inside global interface

R1 Static NAT Configuration

R1(config)#ip nat inside source static 10.0.0.10 50.0.0.10

R1(config)#interface FastEthernet 0/0

R1(config-if)#ip nat inside

R1(config-if)#exit

R1(config)#

R1(config)#interface Serial 0/0/0

R1(config-if)#ip nat outside

R1(config-if)#exit

R2 Static NAT Configuration

R2(config)#ip nat inside source static 192.168.1.10 200.0.0.10

R2(config)#interface FastEthernet 0/0

R2(config-if)#ip nat inside

R2(config-if)#exit

R2(config)#

R2(config)#interface Serial 0/0/0

R2(config-if)#ip nat outside

R2(config-if)#exit

Configure static routing in R1

R1(config)#ip route 200.0.0.0 255.255.255.0 100.0.0.2

Configure static routing in R2

R2(config)#ip route 50.0.0.0 255.0.0.0 100.0.0.1

Testing Static NAT Configuration

We configured static NAT on R1 and R2. On R1 we mapped inside local IP address 10.0.0.10 with inside global address 50.0.0.10 while on R2 we mapped inside local IP address 192.168.1.10 with inside global IP address 200.0.0.10.

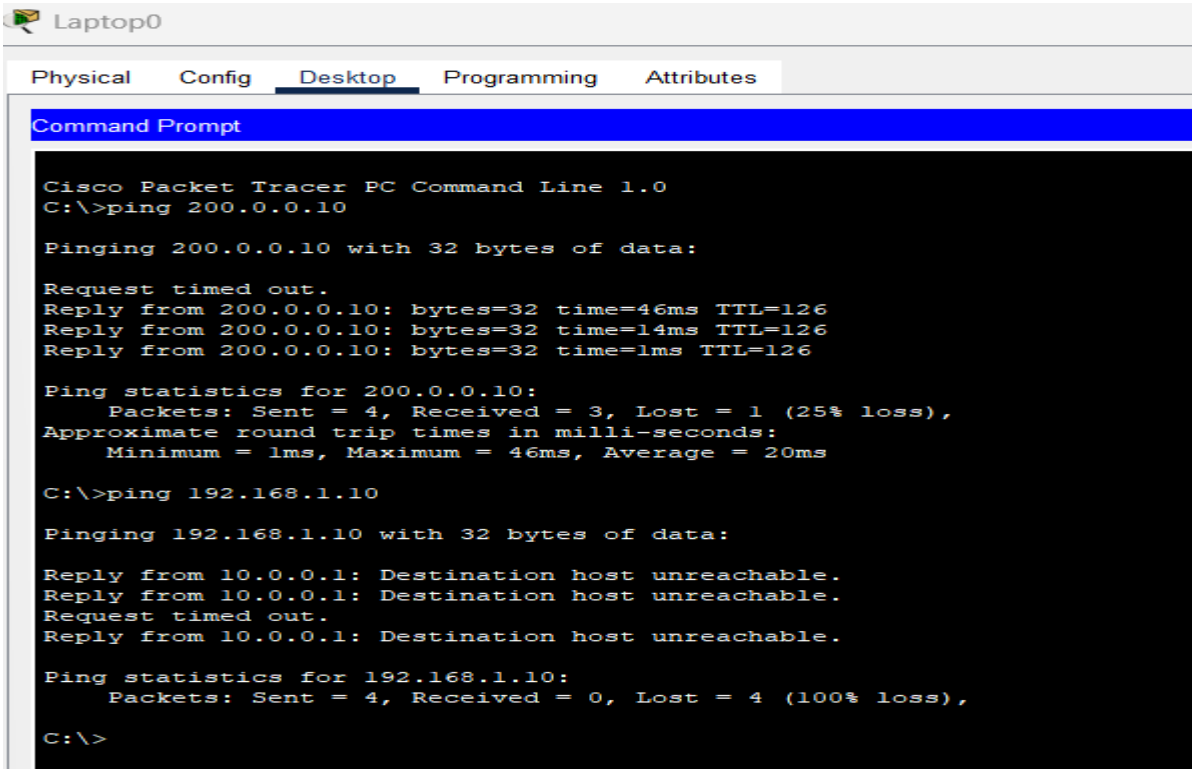
Device	Inside Local IP address	Inside Global IP address
Laptop0	10.0.0.10	50.0.0.10
Server	192.168.1.10	200.0.0.10

To test this setup click Laptop0 and Desktop and click Command Prompt.

Run ipconfig command.

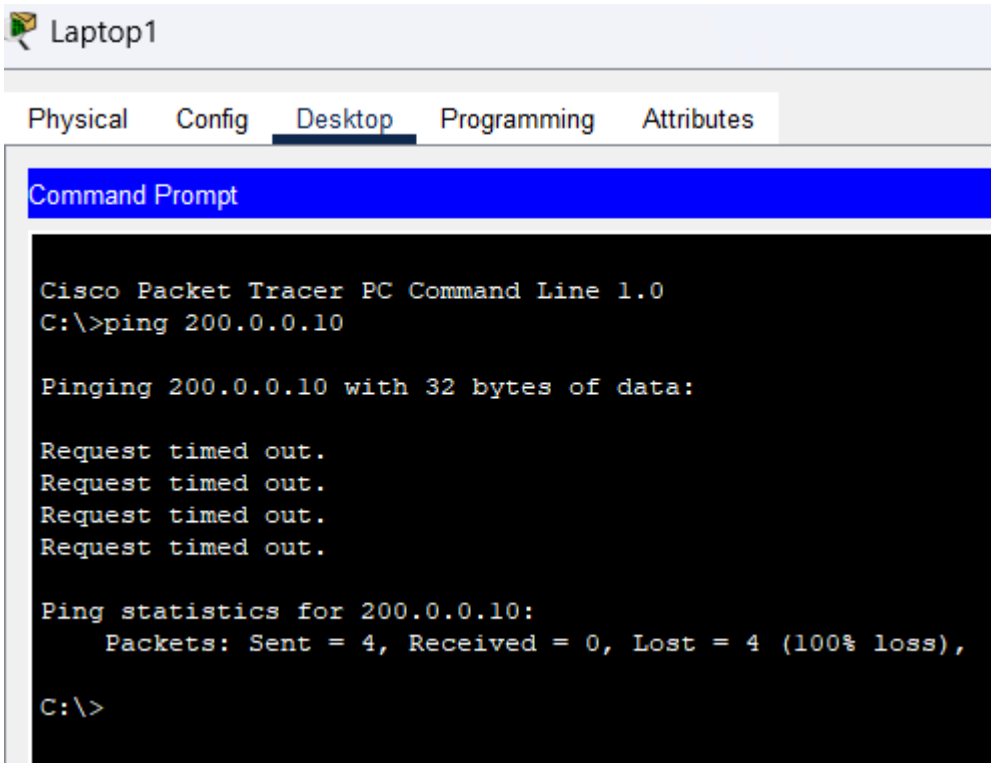
Run ping 200.0.0.10 command.

Run ping 192.168.1.10 command.



- First command checks whether we are able to access the remote device or not. A ping reply confirms that we are able to connect with remote device on this IP address.
- Second command checks whether we are able to access the remote device on its actual IP address or not. A ping error confirms that we are not able to connect with remote device on this IP address.

Now run ping 200.0.0.10 command from Laptop1.



We configured NAT only for one host (Laptop0) which IP address is 10.0.0.10. So only the host 10.0.0.10 will be able to access the remote device.

From R1's point of view remote device's IP address is 200.0.0.10 while from R2's point of view end device's IP address is 50.0.0.10. This way if NAT is enabled we would not be able to trace the actual end device.

RESULT:

Thus the static NAT is configured successfully in cisco packet tracer.