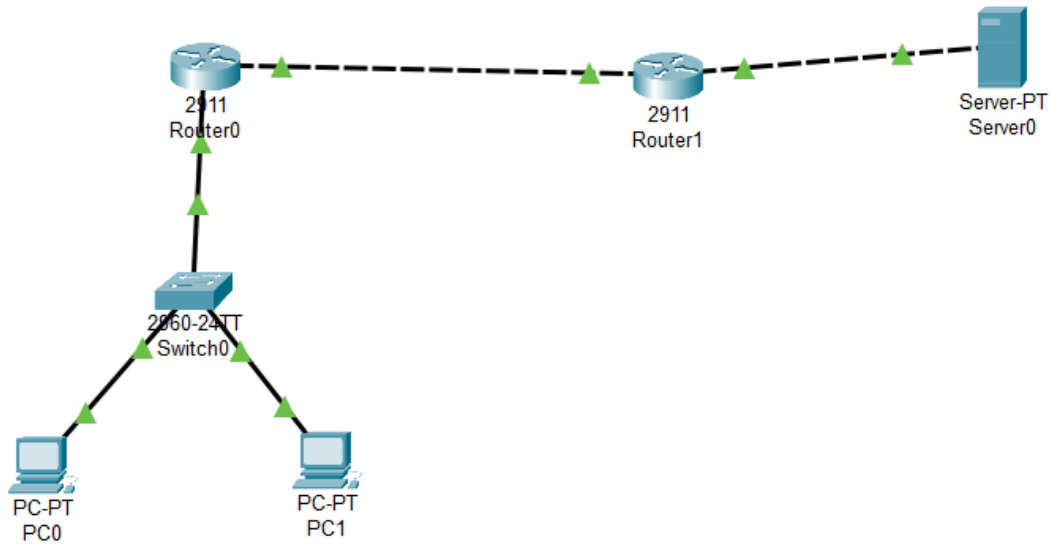
Implement DYNAMIC NAT , STATIC NAT, PAT

DYNAMIC NAT :

NETWORK TOPOLOGY :



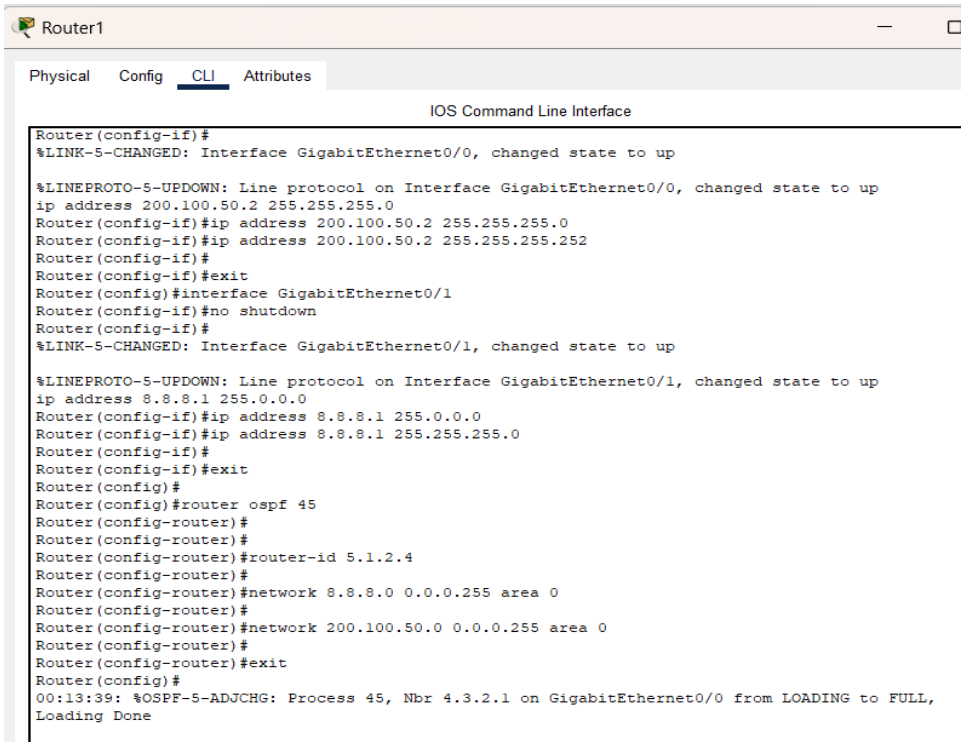
Configuring the routers :

Router0

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface GigabitEthernet0/1
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
ip address 192.168.20.1 255.255.255.0
Router(config-if)#ip address 192.168.20.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
ip address 200.100.50.1 255.255.255.0
Router(config-if)#ip address 200.100.50.1 255.255.255.0
Router(config-if)#ip address 200.100.50.1 255.255.255.252
Router(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#router ospf 45
Router(config-router)#router-id 4.3.2.1
Router(config-router)#
Router(config-router)#
Router(config-router)#network 200.100.50.0 0.0.0.255 area 0
Router(config-router)#
Router(config-router)#
Router(config-router)#network 192.168.20.0 0.0.0.255 area 0
Router(config-router)#exit
Router(config)#
Router(config)#do wr
Building configuration...
[OK]
Router(config)#
```



Creating the DYNAT AND BINDING IT WITH POOL :

```
% Incomplete command.
Router(config)#ip nat pool DYNAT 200.100.50.1 200.100.50.10
% Incomplete command.
Router(config)#ip nat pool DYNAT 200.100.50.1 200.100.50.10 netmask 255.255.255.0
Router(config)#
Router(config)#
Router(config)#ip net inside source list 15 pool DYNAT
                 ^
% Invalid input detected at '^' marker.

Router(config)#ip nAt5 pool DYNAT ^Z
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#config
Configuring from terminal, memory, or network [terminal]? terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip nat inside source list 15 pool DYNAT
```

Confifuring nat inside and ouside :

```
Router(config)#
Router(config)#int gig0/0
Router(config-if)#ip nat outside
Router(config-if)#
Router(config-if)#ex
Router(config)#
Router(config)#int gig0/1
Router(config-if)#ip nat inside
Router(config-if)#ex
Router(config)#
Router(config)#do wr
Building configuration...
[OK]
Router(config)#
```

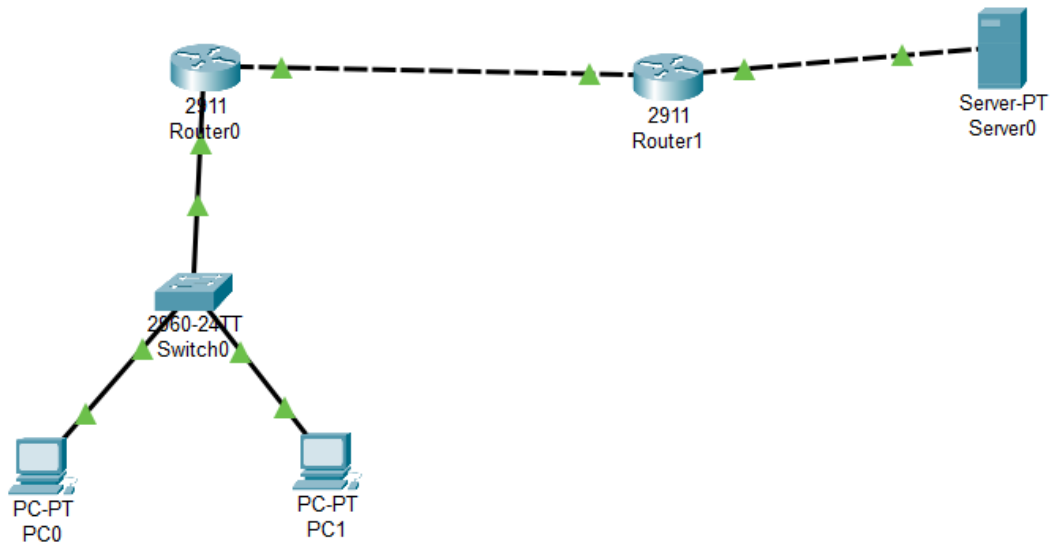
Pinging from pc0 to server :

```
C:\>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:

Reply from 8.8.8.8: bytes=32 time<1ms TTL=126
Reply from 8.8.8.8: bytes=32 time<1ms TTL=126
Reply from 8.8.8.8: bytes=32 time<1ms TTL=126
Reply from 8.8.8.8: bytes=32 time<1ms TTL=126

Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

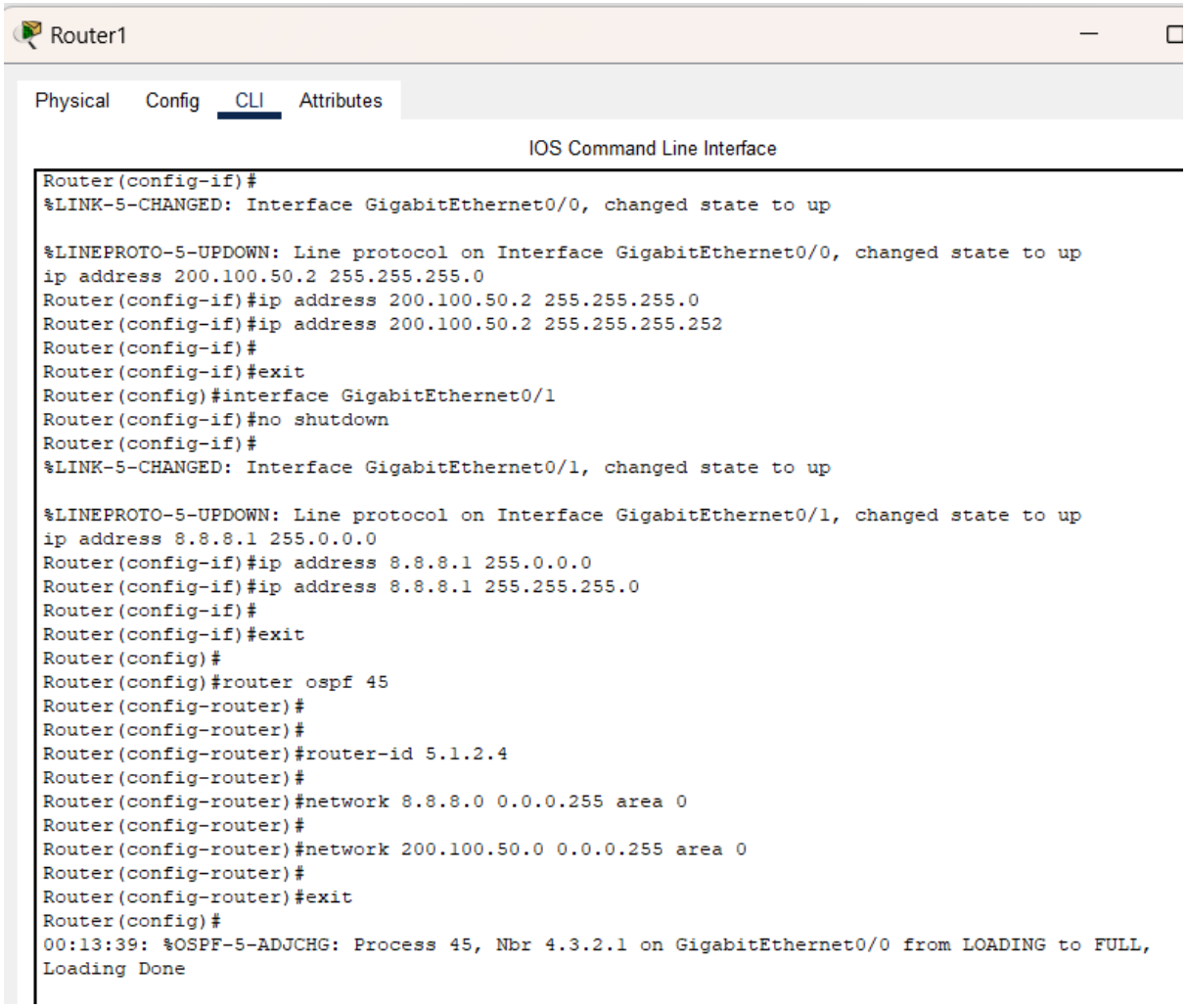
IP NAT TRANSLATIONS :

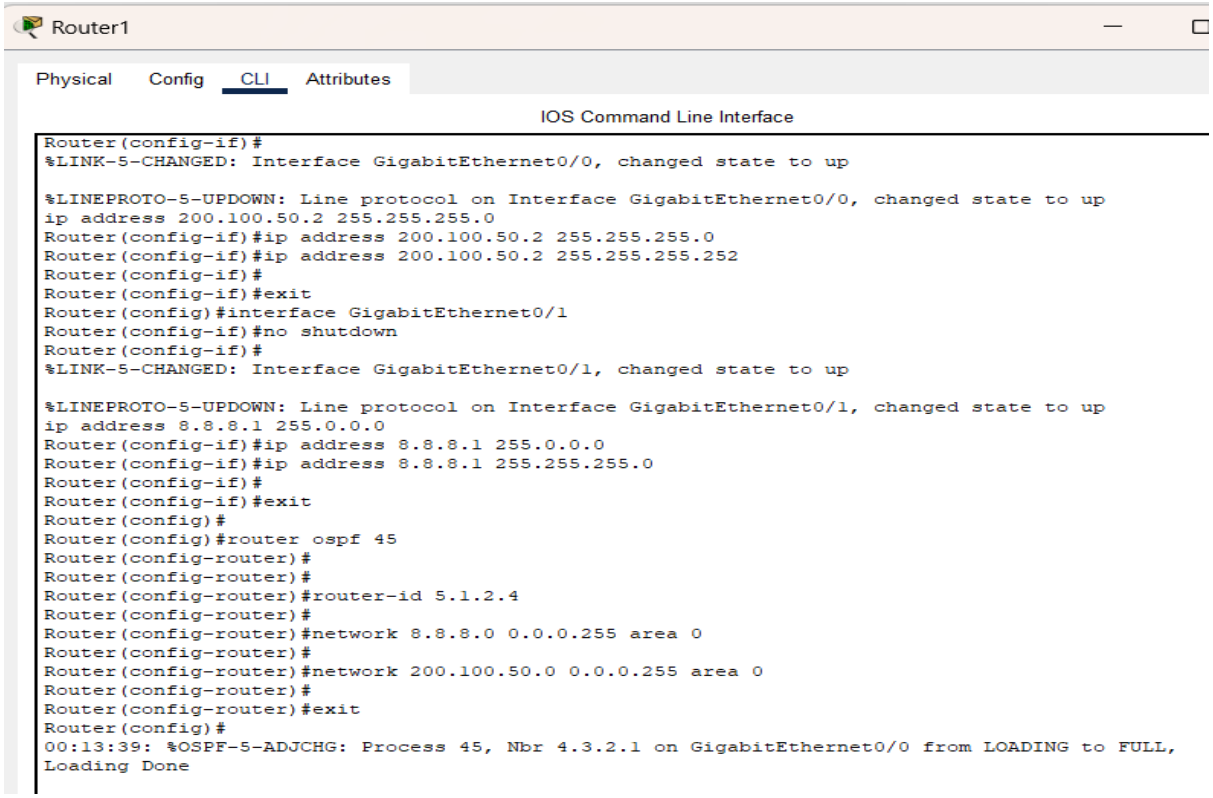
```
Router#sh ip nat translations
Router#sh ip nat translations
Pro  Inside global     Inside local       Outside local      Outside global
icmp 200.100.50.1:5    192.168.20.10:5    8.8.8.8:5          8.8.8.8:5
icmp 200.100.50.1:6    192.168.20.10:6    8.8.8.8:6          8.8.8.8:6
icmp 200.100.50.1:7    192.168.20.10:7    8.8.8.8:7          8.8.8.8:7
icmp 200.100.50.1:8    192.168.20.10:8    8.8.8.8:8          8.8.8.8:8
```

Now implementing PAT :

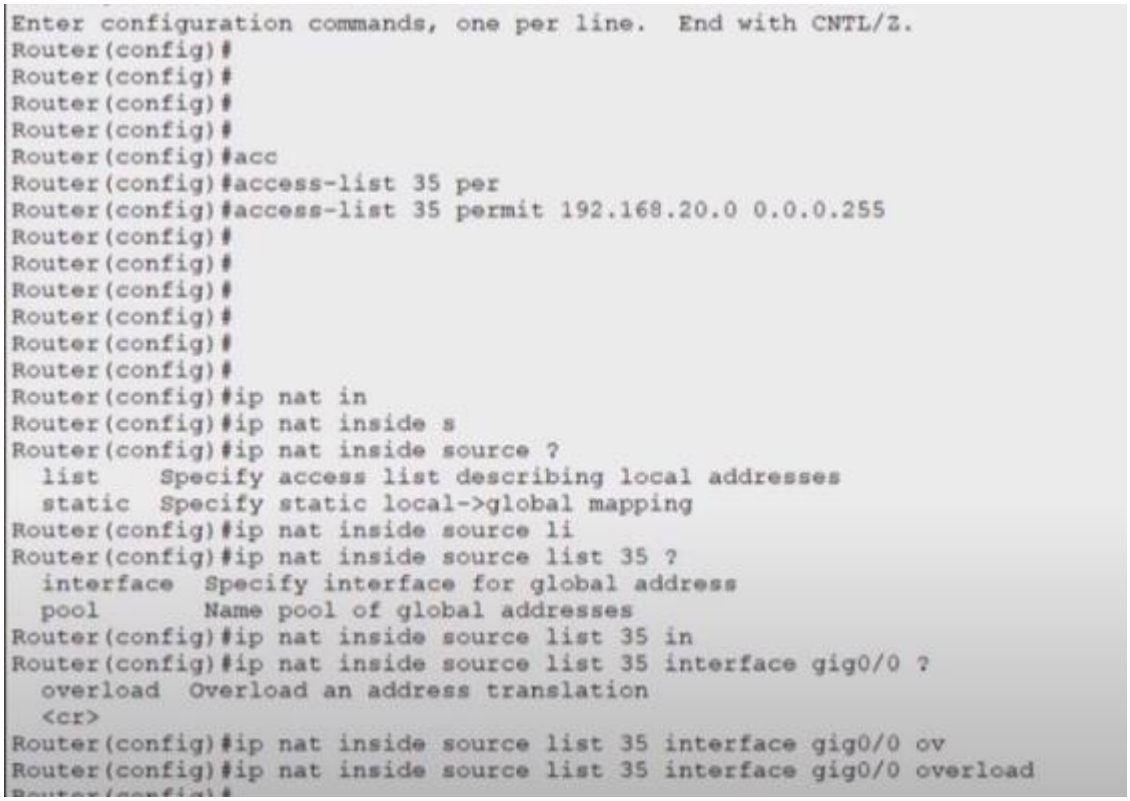


ROUTER Configuration :





Implementing the pat in router 0:



Now pinging to server from pc0:

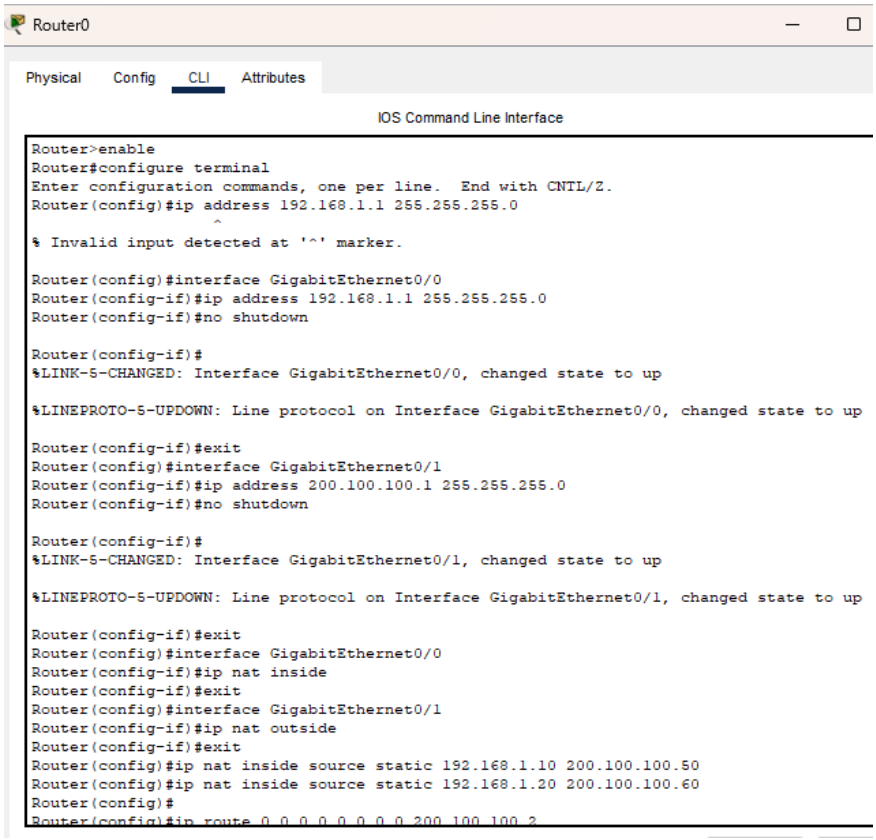
```
C:\>ping 8.8.8.8

Pinging 8.8.8.8 with 32 bytes of data:

Reply from 8.8.8.8: bytes=32 time<1ms TTL=126
Reply from 8.8.8.8: bytes=32 time<1ms TTL=126
Reply from 8.8.8.8: bytes=32 time<1ms TTL=126
Reply from 8.8.8.8: bytes=32 time<1ms TTL=126

Ping statistics for 8.8.8.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

NAT TRANSLATIONS :

```
Router#sh ip nat translations
Pro  Inside global     Inside local       Outside local      Outside global
icmp 200.100.50.1:17   192.168.20.10:17   8.8.8.8:17         8.8.8.8:17
icmp 200.100.50.1:18   192.168.20.10:18   8.8.8.8:18         8.8.8.8:18
icmp 200.100.50.1:19   192.168.20.10:19   8.8.8.8:19         8.8.8.8:19
icmp 200.100.50.1:20   192.168.20.10:20   8.8.8.8:20         8.8.8.8:20
icmp 200.100.50.1:21   192.168.20.10:21   8.8.8.8:21         8.8.8.8:21
icmp 200.100.50.1:22   192.168.20.10:22   8.8.8.8:22         8.8.8.8:22
icmp 200.100.50.1:23   192.168.20.10:23   8.8.8.8:23         8.8.8.8:23
icmp 200.100.50.1:24   192.168.20.10:24   8.8.8.8:24         8.8.8.8:24
icmp 200.100.50.1:25   192.168.20.10:25   8.8.8.8:25         8.8.8.8:25
icmp 200.100.50.1:26   192.168.20.10:26   8.8.8.8:26         8.8.8.8:26
```

STATIC NAT :

Router configuration :

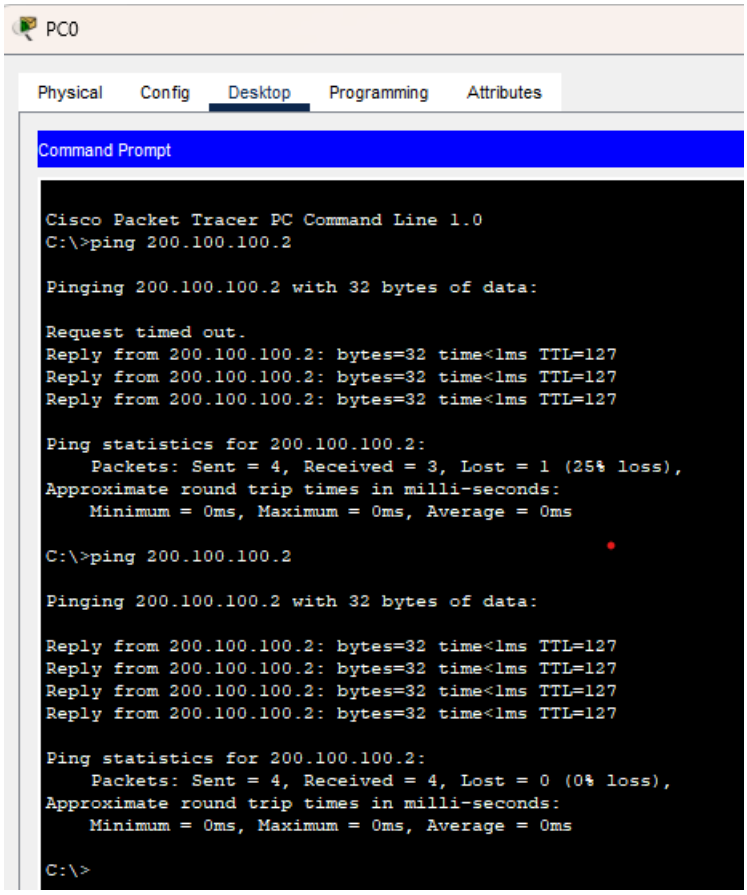


NAT:

```
Router(config)#interface GigabitEthernet0/0
Router(config-if)#ip nat inside
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/1
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#ip nat inside source static 192.168.1.10 200.100.100.50
Router(config)#ip nat inside source static 192.168.1.20 200.100.100.60
```

IP NAT TRANSLATIONS :

```
Router#show ip nat translations
Pro  Inside global     Inside local       Outside local      Outside global
icmp 200.100.100.50:10 192.168.1.10:10    200.100.100.2:10   200.100.100.2:10
icmp 200.100.100.50:1  192.168.1.10:1     200.100.100.2:1    200.100.100.2:1
icmp 200.100.100.50:2  192.168.1.10:2     200.100.100.2:2    200.100.100.2:2
icmp 200.100.100.50:3  192.168.1.10:3     200.100.100.2:3    200.100.100.2:3
icmp 200.100.100.50:4  192.168.1.10:4     200.100.100.2:4    200.100.100.2:4
icmp 200.100.100.50:5  192.168.1.10:5     200.100.100.2:5    200.100.100.2:5
icmp 200.100.100.50:6  192.168.1.10:6     200.100.100.2:6    200.100.100.2:6
icmp 200.100.100.50:7  192.168.1.10:7     200.100.100.2:7    200.100.100.2:7
icmp 200.100.100.50:8  192.168.1.10:8     200.100.100.2:8    200.100.100.2:8
icmp 200.100.100.50:9  192.168.1.10:9     200.100.100.2:9    200.100.100.2:9
---  200.100.100.50    192.168.1.10       ---                ---
---  200.100.100.60    192.168.1.20       ---                ---
```


PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 200.100.100.2
Pinging 200.100.100.2 with 32 bytes of data:
Request timed out.
Reply from 200.100.100.2: bytes=32 time<1ms TTL=127
Reply from 200.100.100.2: bytes=32 time<1ms TTL=127
Reply from 200.100.100.2: bytes=32 time<1ms TTL=127
Ping statistics for 200.100.100.2:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 200.100.100.2
Pinging 200.100.100.2 with 32 bytes of data:
Reply from 200.100.100.2: bytes=32 time<1ms TTL=127
Reply from 200.100.100.2: bytes=32 time<1ms TTL=127
Reply from 200.100.100.2: bytes=32 time<1ms TTL=127
Reply from 200.100.100.2: bytes=32 time<1ms TTL=127
Ping statistics for 200.100.100.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>