

DCCN ISE- NAT

Name:

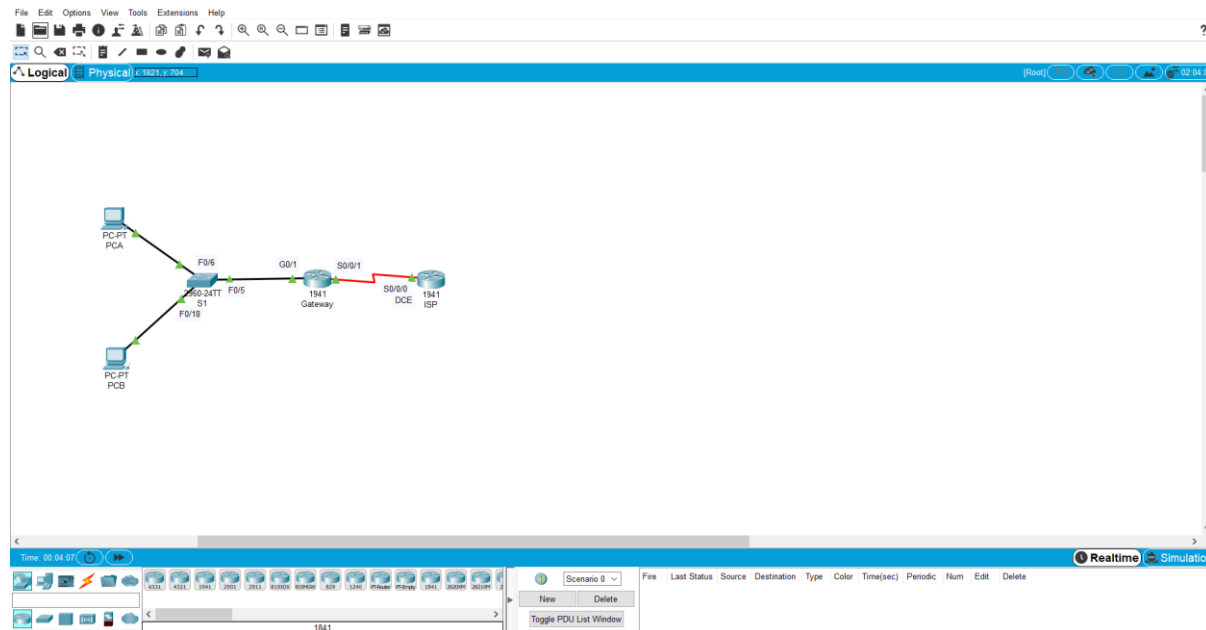
Siddhi Lahange 2019230066

Prachi Mehta 2018130025

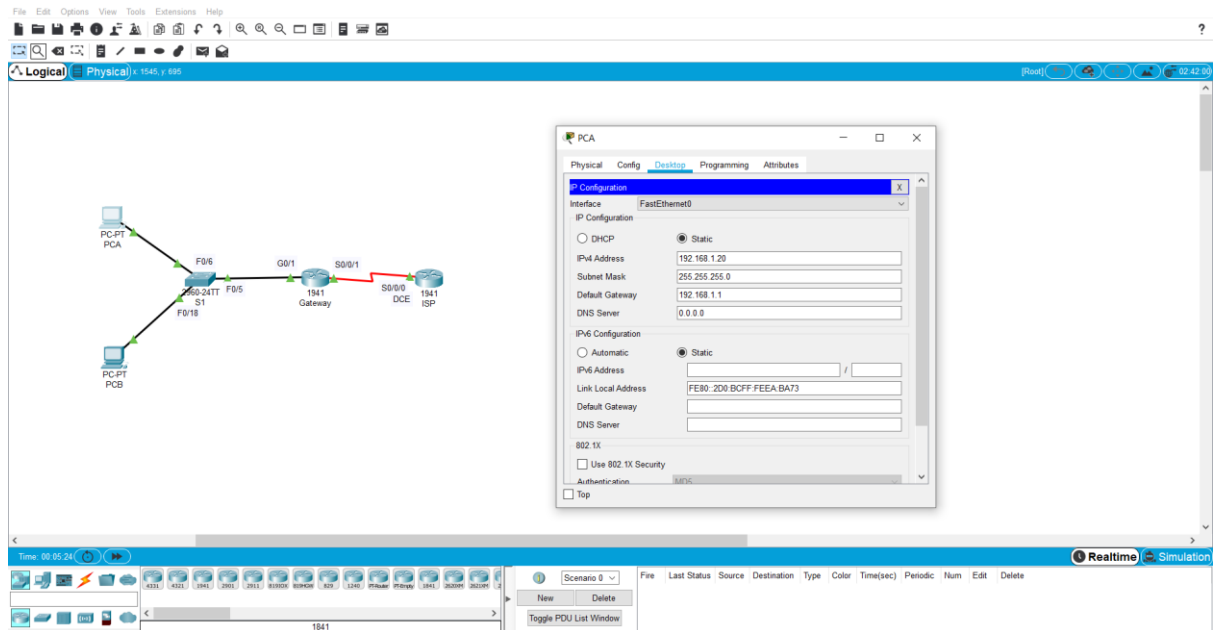
Prashansa Nalawade 201923006

Batch B (TE COMPS)

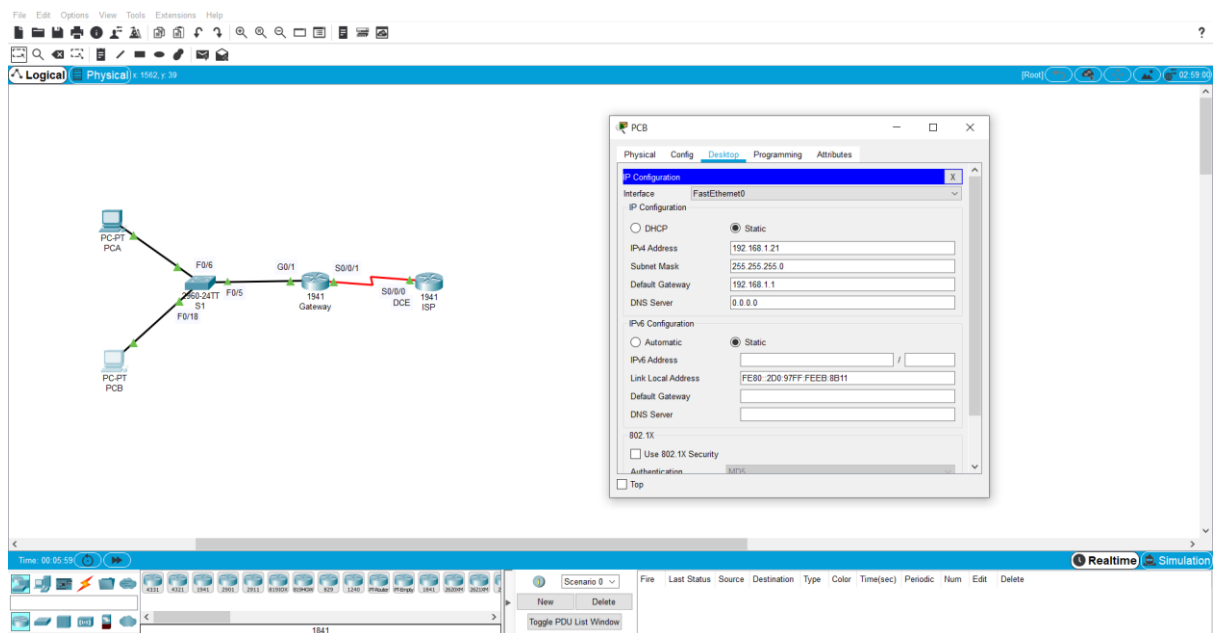
TASK 1: To set up the topology and verify end to end configuration.



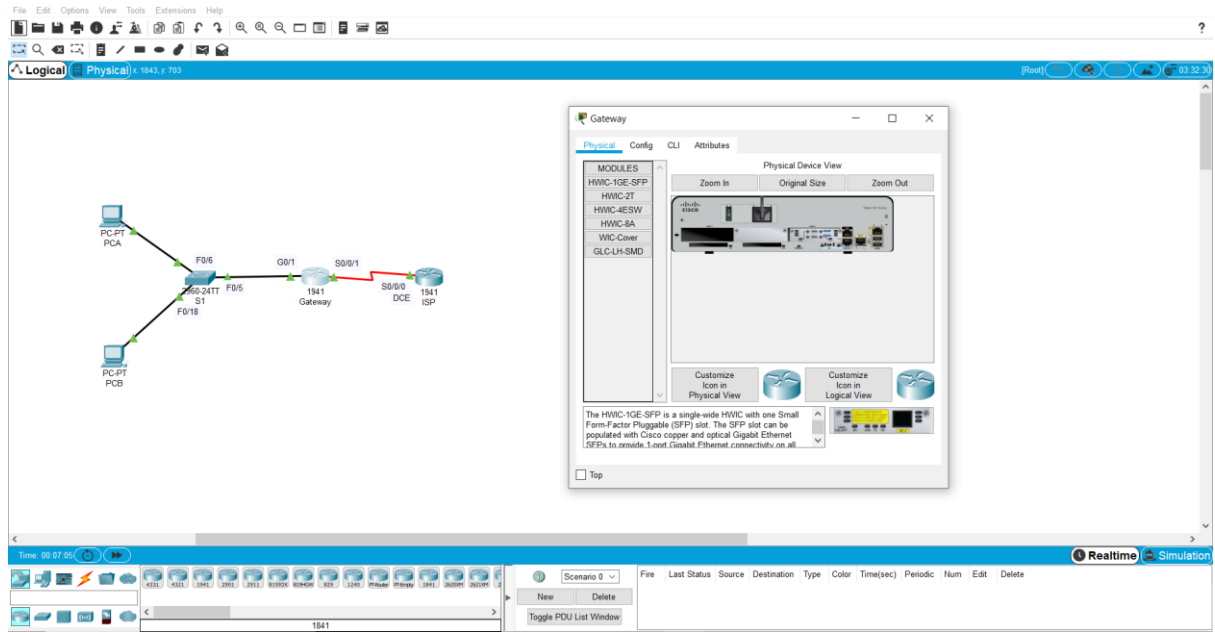
PC-A Configuration:



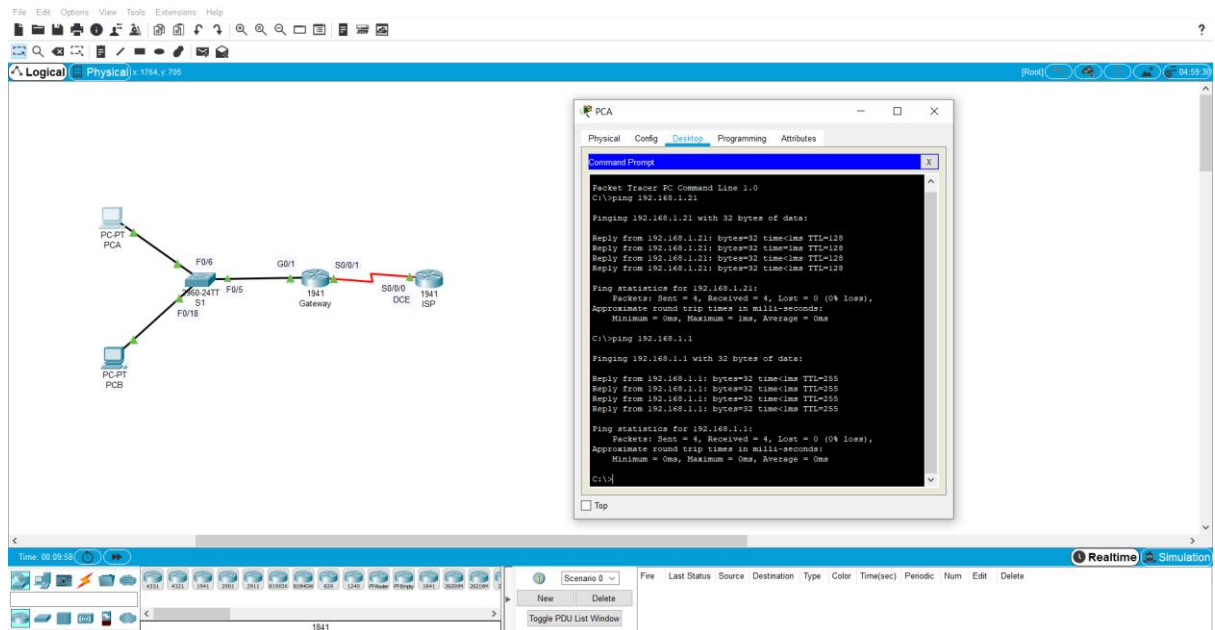
PC-B Configuration

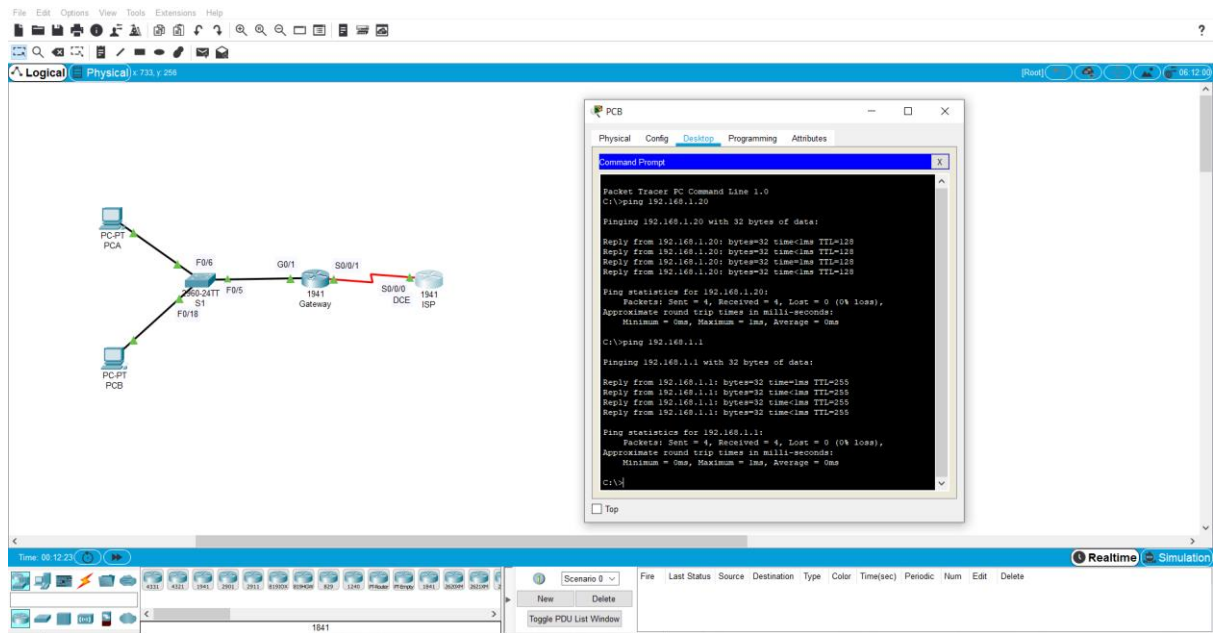


Gateway configuration



Verify Connectivity:

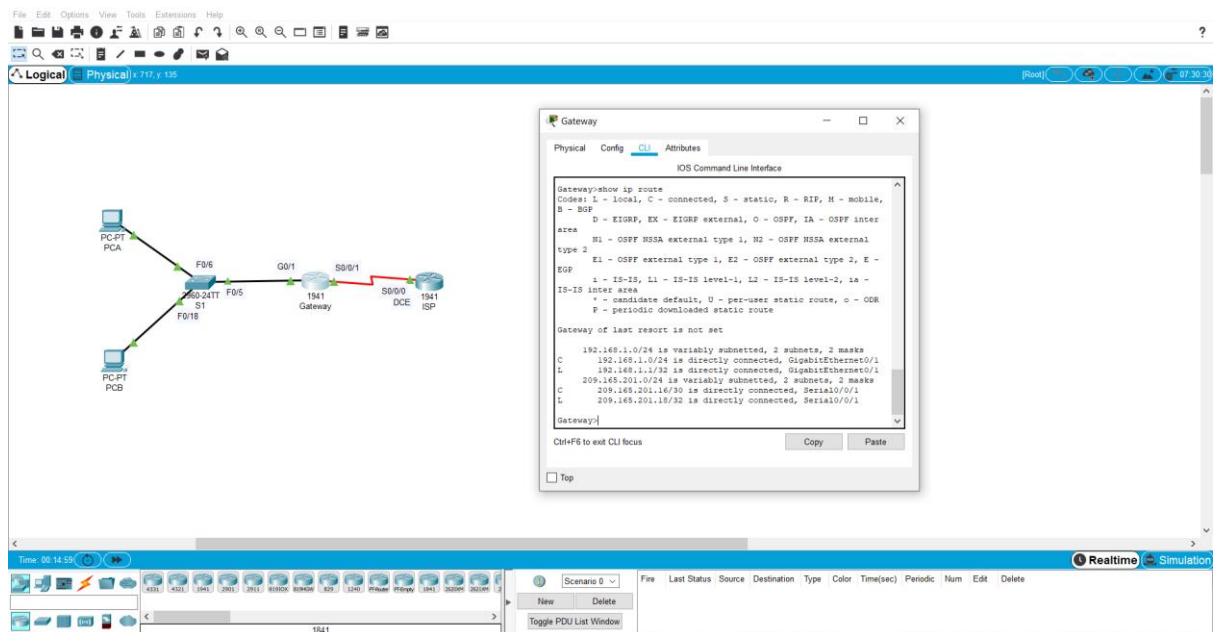


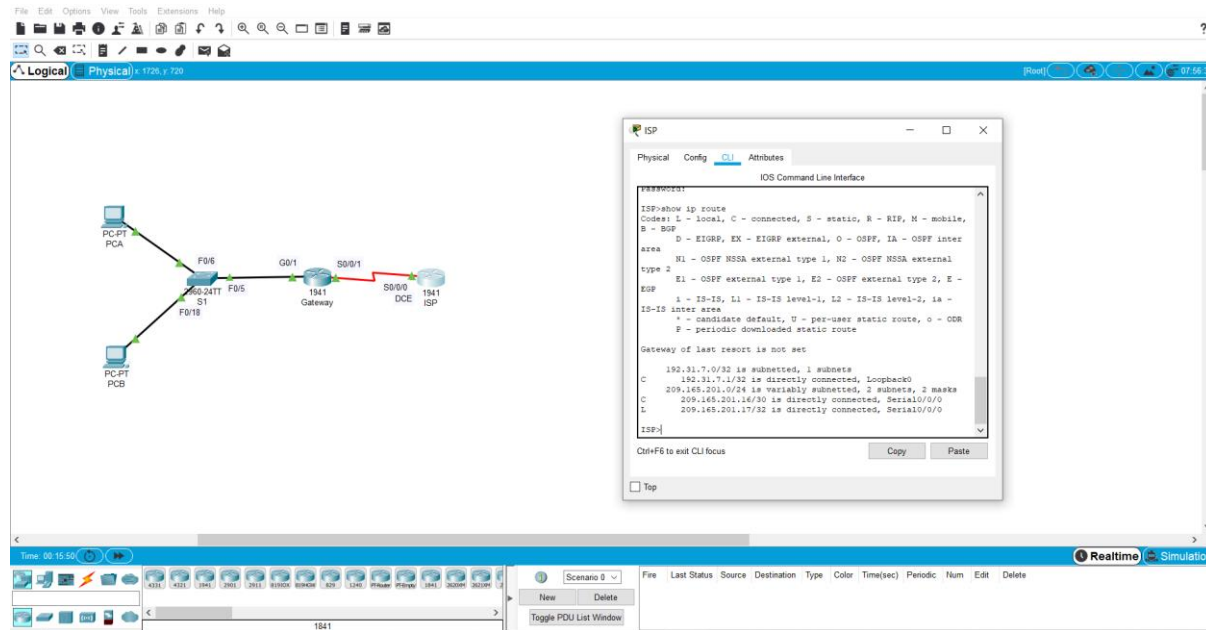


All the pings are successfully completed.

Routing tables on both routers to verify static route in routing table: Gateway routing

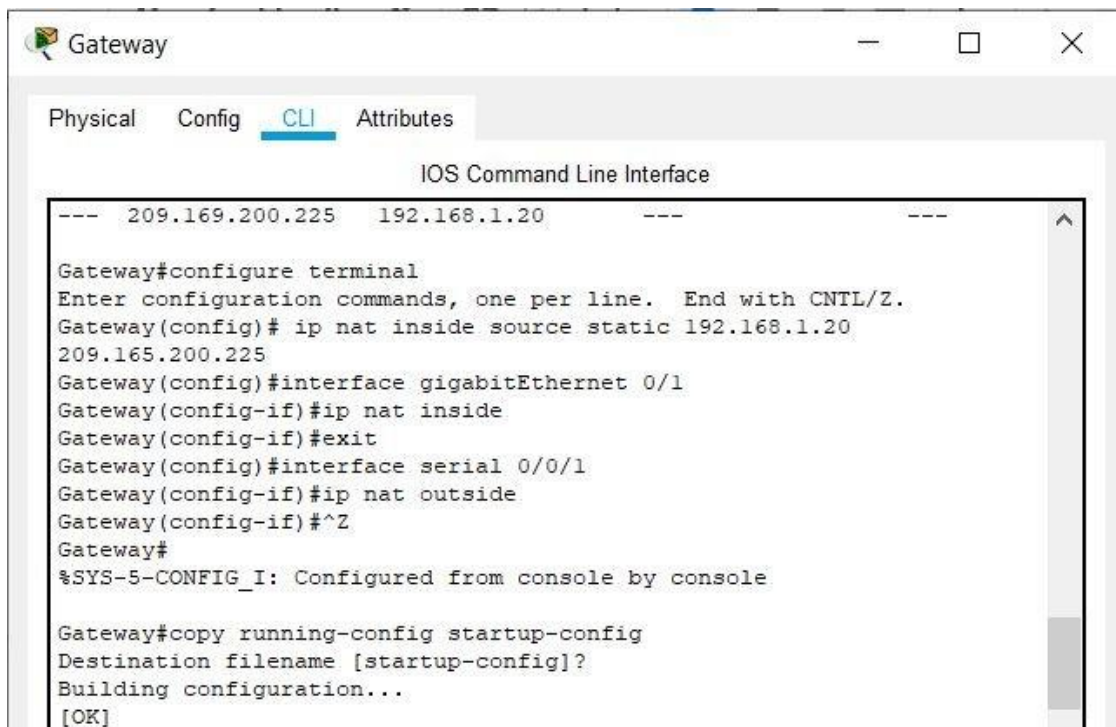
table:





TASK 2 :

Step 1: Configure a static mapping and specify the interfaces.

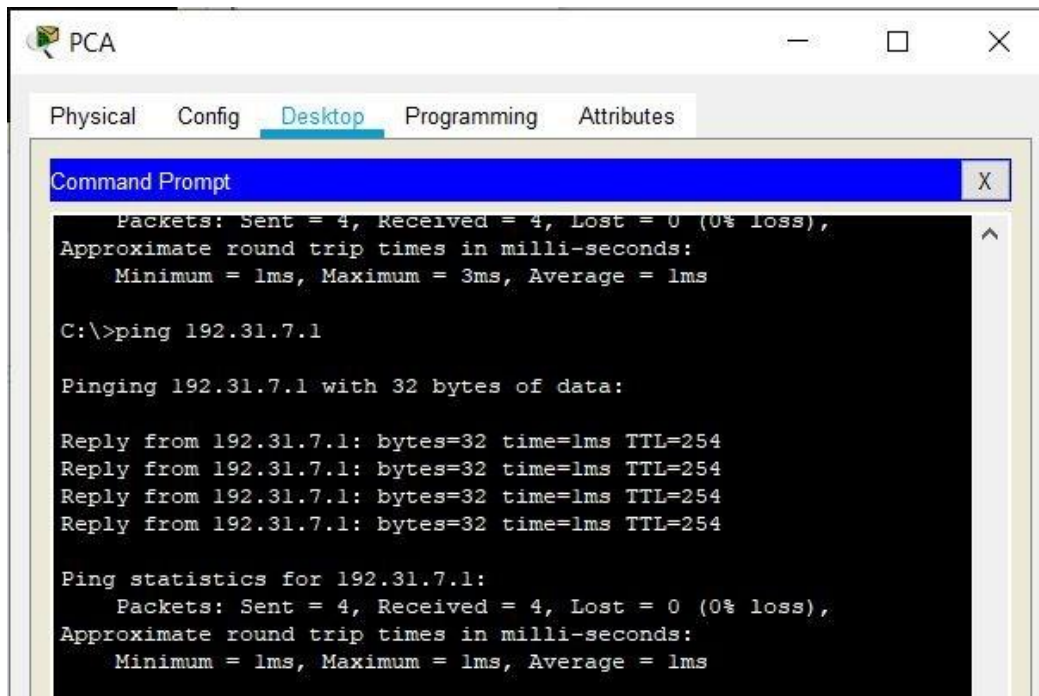


Step 3: Test the configuration.

What is the configuration of the inside local host address? 192.168.1.20 → 209.165.200.225



From PC-A, ping the Lo0 interface (172.31.7.1) on ISP:



```
PCA
Physical Config Desktop Programming Attributes
Command Prompt
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
  Minimum = 1ms, Maximum = 3ms, Average = 1ms

C:\>ping 192.31.7.1

Pinging 192.31.7.1 with 32 bytes of data:

Reply from 192.31.7.1: bytes=32 time=1ms TTL=254
Reply from 192.31.7.1: bytes=32 time=1ms TTL=254
Reply from 192.31.7.1: bytes=32 time=1ms TTL=254
Reply from 192.31.7.1: bytes=32 time=1ms TTL=254

Ping statistics for 192.31.7.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

A NAT entry was added to the table with ICMP listed as the protocol when PC-A sent an ICMP request (ping) to 192.31.7.1 on ISP.

What port number was used in this ICMP exchange? 5,6,7,8



```
Gateway
Physical Config CLI Attributes
IOS Command Line Interface

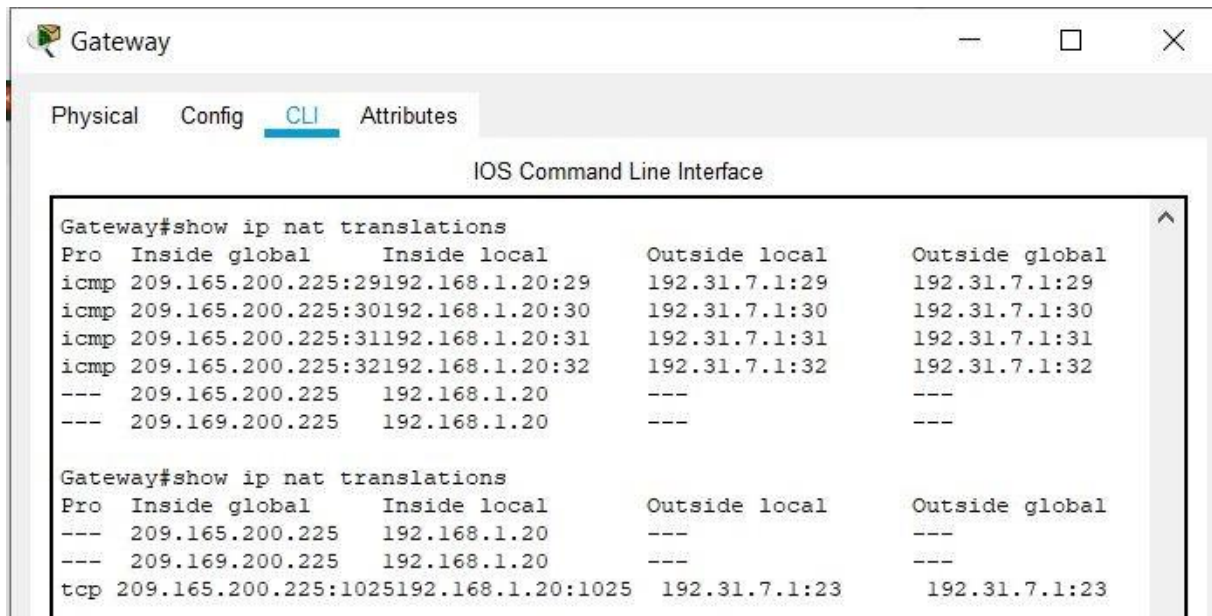
Gateway#show ip nat translations
Pro Inside global      Inside local      Outside local      Outside global
icmp 209.165.200.225:29 192.168.1.20:29   192.31.7.1:29      192.31.7.1:29
icmp 209.165.200.225:30 192.168.1.20:30   192.31.7.1:30      192.31.7.1:30
icmp 209.165.200.225:31 192.168.1.20:31   192.31.7.1:31      192.31.7.1:31
icmp 209.165.200.225:32 192.168.1.20:32   192.31.7.1:32      192.31.7.1:32
--- 209.165.200.225     192.168.1.20     ---                ---
--- 209.169.200.225     192.168.1.20     ---                ---
```

C] From PC-A, telnet to the ISP Lo0 interface and display the NAT table. What was the protocol used in this translation? tcp

What are the port numbers used?

Inside global / local: 1026

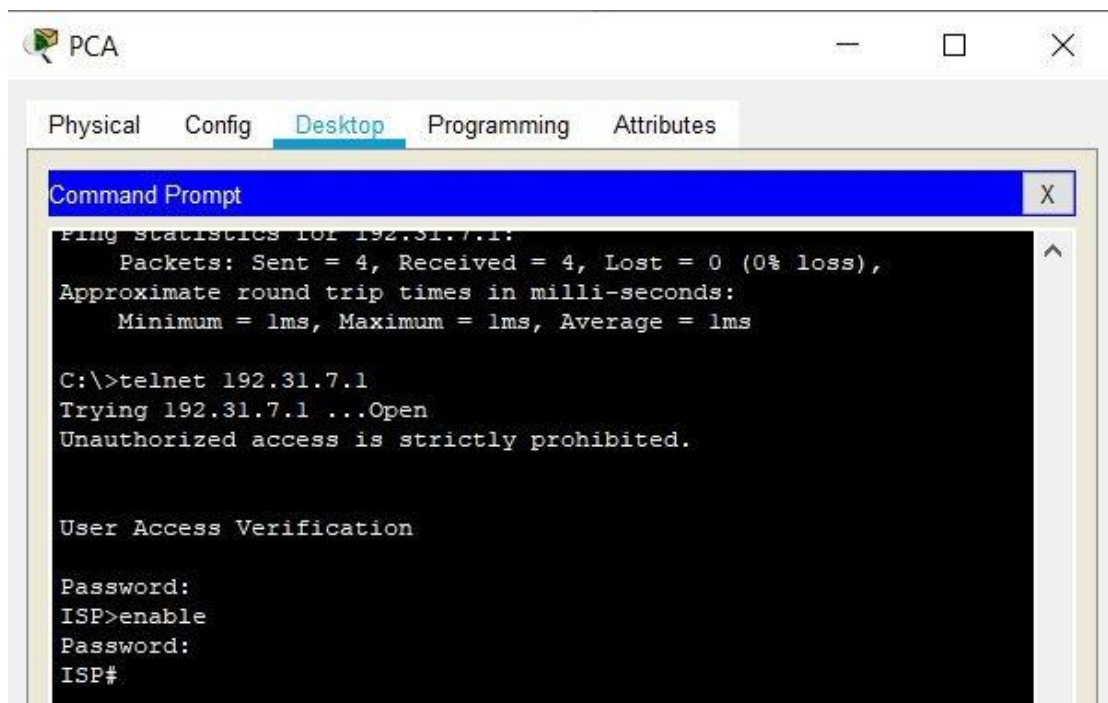
Outside global / local:23



The screenshot shows the Gateway CLI window with the 'CLI' tab selected. The title bar reads 'Gateway'. The main window title is 'IOS Command Line Interface'. The command 'Gateway#show ip nat translations' has been entered twice. The first output shows a table of NAT translations for ICMP traffic. The second output shows a table of NAT translations for TCP traffic.

Pro	Inside global	Inside local	Outside local	Outside global
icmp	209.165.200.225:29	192.168.1.20:29	192.31.7.1:29	192.31.7.1:29
icmp	209.165.200.225:30	192.168.1.20:30	192.31.7.1:30	192.31.7.1:30
icmp	209.165.200.225:31	192.168.1.20:31	192.31.7.1:31	192.31.7.1:31
icmp	209.165.200.225:32	192.168.1.20:32	192.31.7.1:32	192.31.7.1:32
---	209.165.200.225	192.168.1.20	---	---
---	209.169.200.225	192.168.1.20	---	---

Pro	Inside global	Inside local	Outside local	Outside global
---	209.165.200.225	192.168.1.20	---	---
---	209.169.200.225	192.168.1.20	---	---
tcp	209.165.200.225:1025	192.168.1.20:1025	192.31.7.1:23	192.31.7.1:23



The screenshot shows the PCA Desktop window with the 'Desktop' tab selected. The title bar reads 'PCA'. A 'Command Prompt' window is open, displaying the following text:

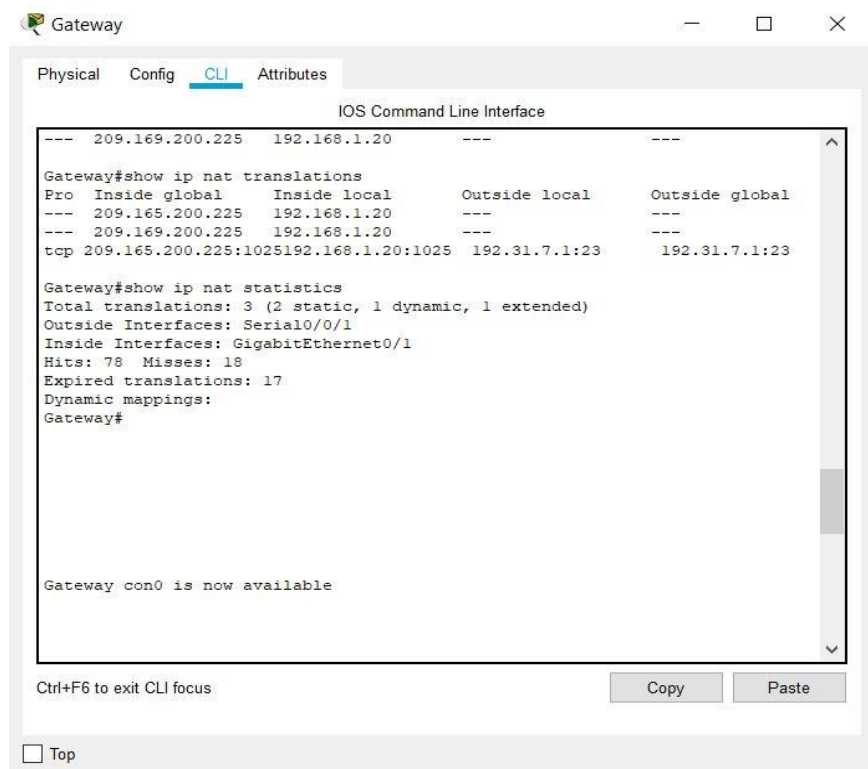
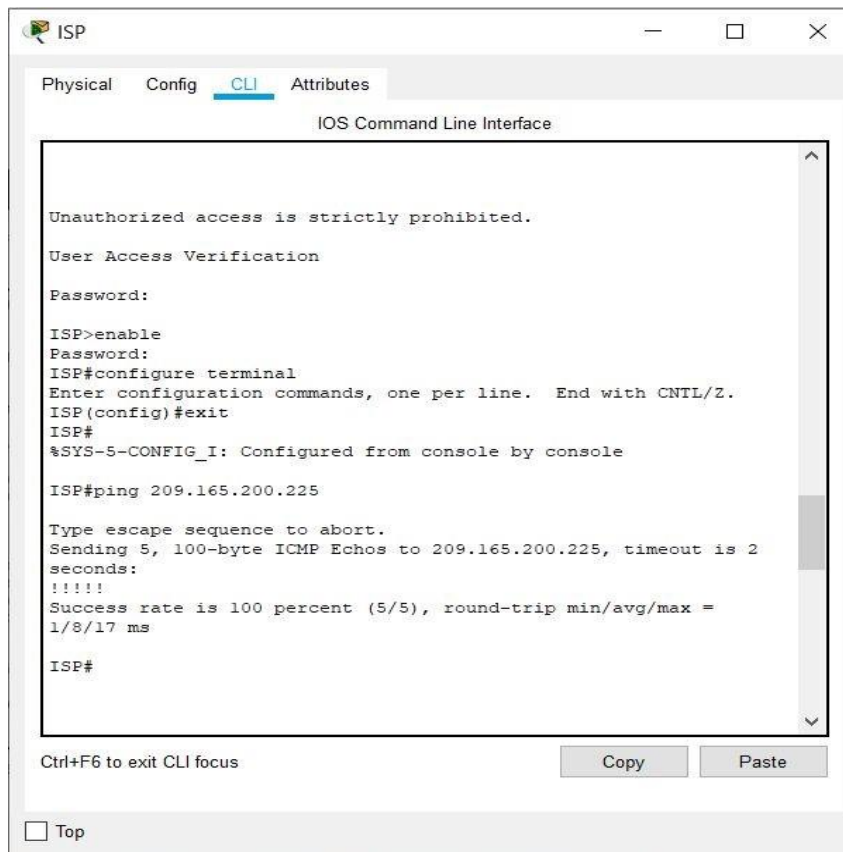
```
Ping statistics for 192.31.7.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\>telnet 192.31.7.1
Trying 192.31.7.1 ...Open
Unauthorized access is strictly prohibited.

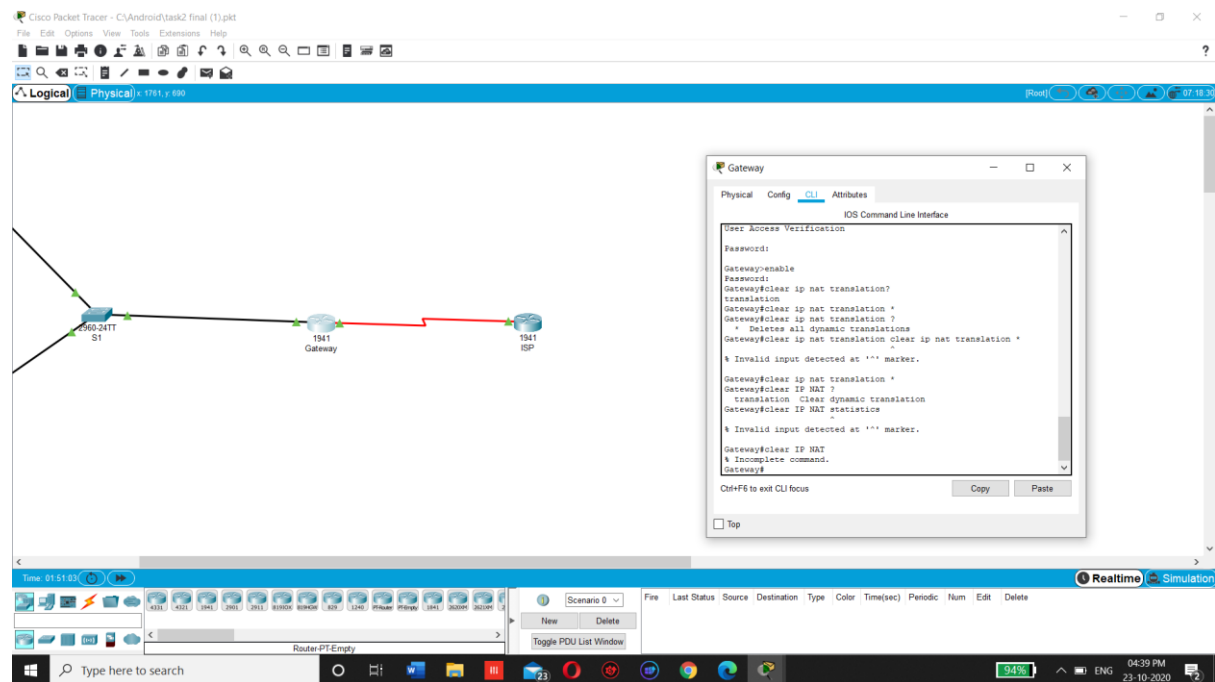
User Access Verification

Password:
ISP>enable
Password:
ISP#
```

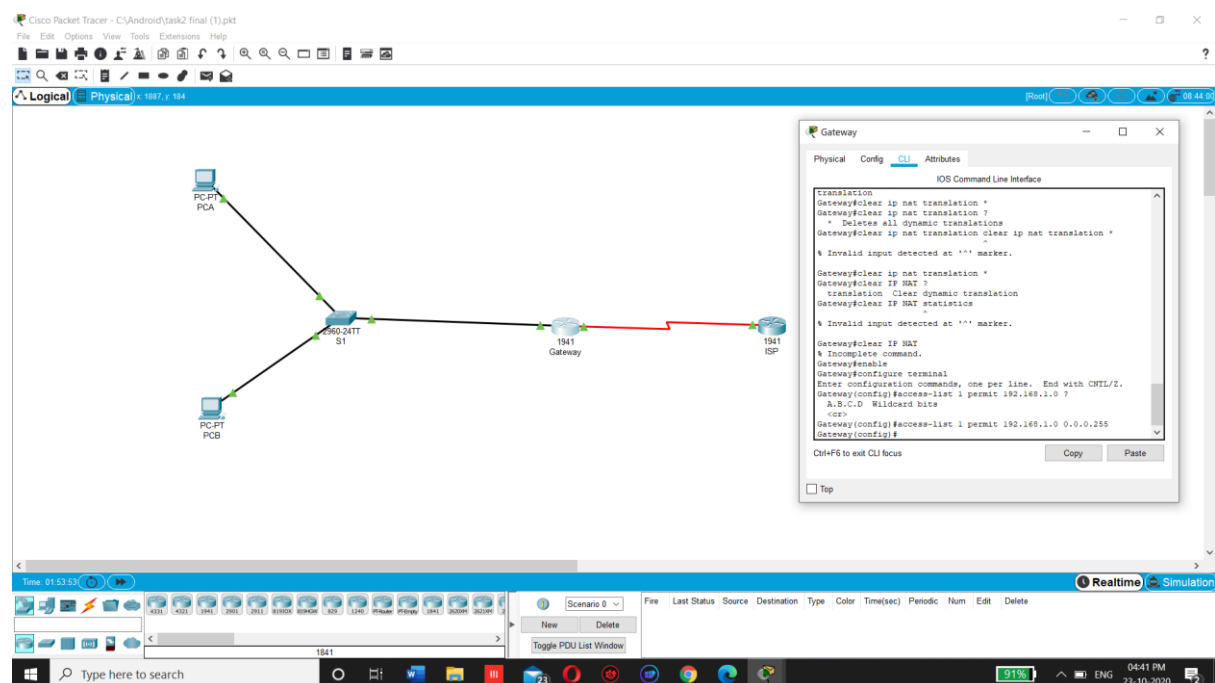
Because static NAT was configured for PC-A, verify that pinging from ISP to PC-A



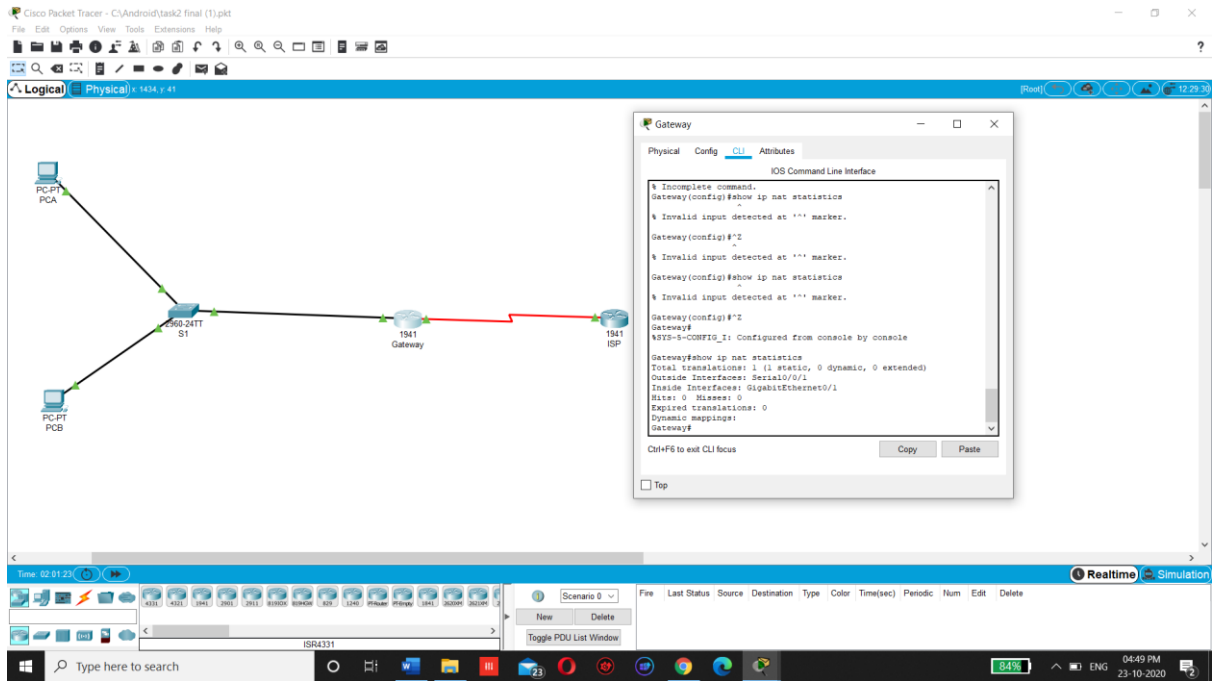
Step 1: Clear NATs



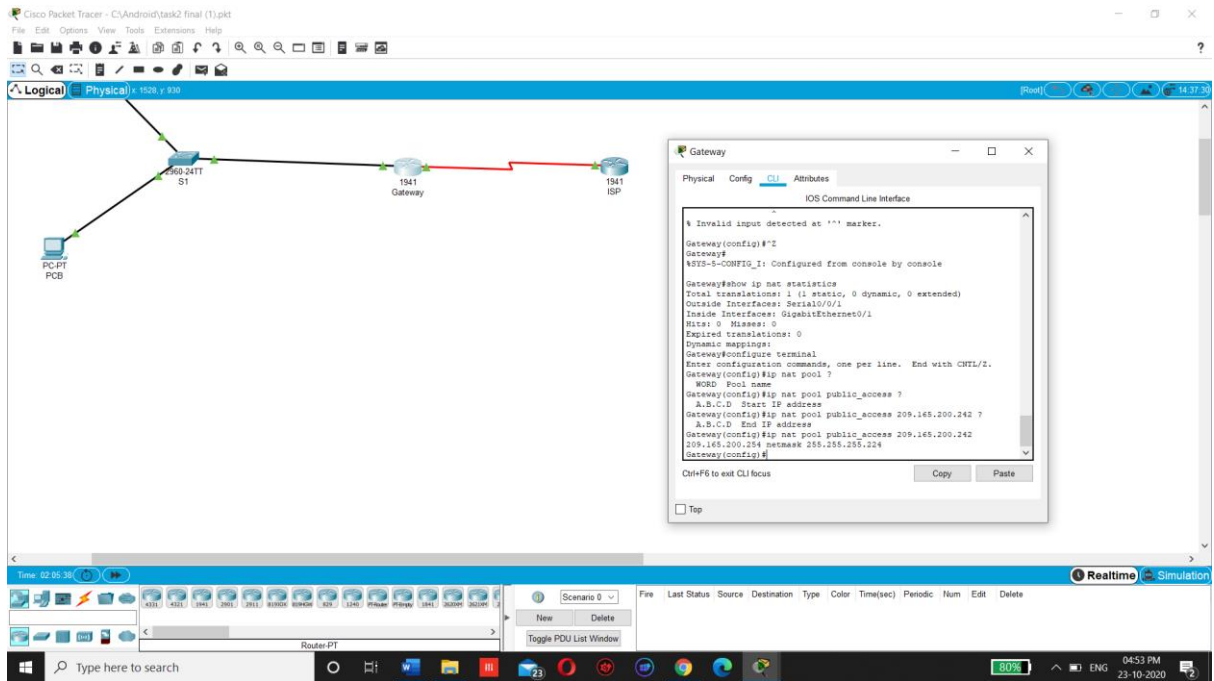
Step 2:



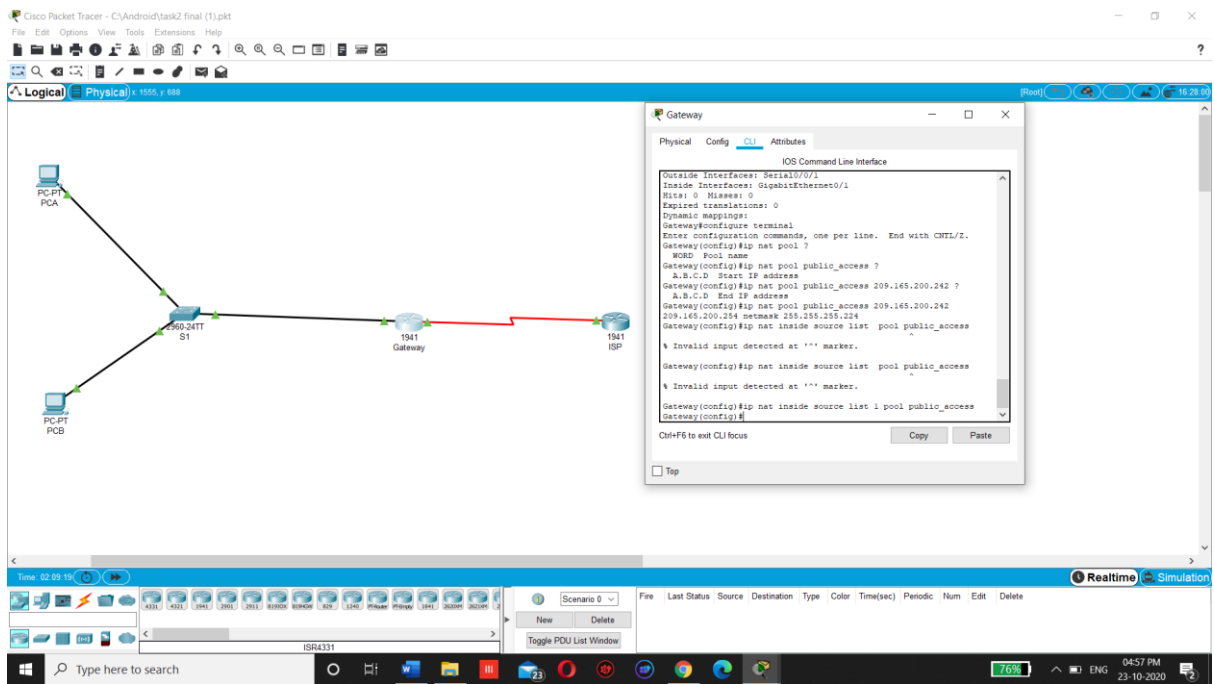
Step 3:



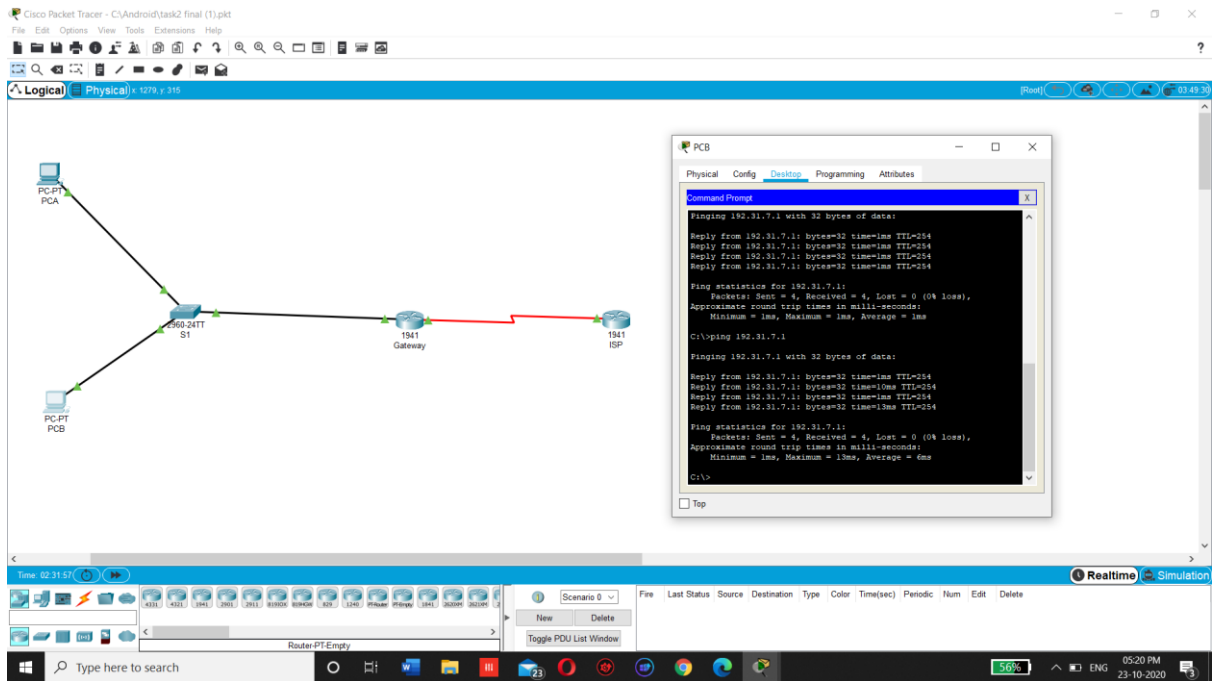
Step 4:



Step 5:



Step 6:



Cisco Packet Tracer - C:\Android\task3.plz

File Edit Options View Tools Extensions Help

Logical Physical x 330 v 330

Time: 00:14:25

Scenario 0

Toggle PDU List Window

Type here to search

Realtime Simulation

12:43 PM 24-10-2020

Gateway

Physical Config CLI Attributes

IOS Command Line Interface

```

Gateway(config)#ip nat pool public_access 209.165.200.242
209.165.200.254 netmask 255.255.255.224
Gateway(config)#ip nat inside source list 1 pool public_access
Gateway(config)#show ip nat translations

% Invalid input detected at '''' marker.

Gateway(config)#?
%SYS-5-CONFIG_I: Configured from console by console

Gateway#show ip nat translations
Pro Inside global      Inside local      Outside local
-----
comp 209.165.200.242:1 192.168.1.21:1    192.31.7.1:1
192.31.7.1:1
comp 209.165.200.242:2 192.168.1.21:2    192.31.7.1:2
192.31.7.1:2
comp 209.165.200.242:3 192.168.1.21:3    192.31.7.1:3
192.31.7.1:3
comp 209.165.200.242:4 192.168.1.21:4    192.31.7.1:4
192.31.7.1:4
--- 209.165.200.225    192.168.1.20      ---
Gateway#
  
```

Ctrl+F6 to exit CLI focus

Copy Paste

Top

Cisco Packet Tracer - C:\Android\task3.plz

File Edit Options View Tools Extensions Help

Logical Physical x 330 v 330

Time: 00:18:25

Scenario 0

Toggle PDU List Window

Type here to search

Realtime Simulation

12:47 PM 24-10-2020

Gateway

Physical Config CLI Attributes

IOS Command Line Interface

```

192.31.7.1:3
comp 209.165.200.242:4 192.168.1.21:4    192.31.7.1:4
192.31.7.1:4
--- 209.165.200.225    192.168.1.20      ---
Gateway#show ip nat translations
Pro Inside global      Inside local      Outside local
-----
comp 209.165.200.242:1 192.168.1.21:1    192.31.7.1:1
192.31.7.1:1
comp 209.165.200.242:2 192.168.1.21:2    192.31.7.1:2
192.31.7.1:2
comp 209.165.200.242:3 192.168.1.21:3    192.31.7.1:3
192.31.7.1:3
comp 209.165.200.242:4 192.168.1.21:4    192.31.7.1:4
192.31.7.1:4
--- 209.165.200.225    192.168.1.20      ---
Gateway#show ip nat statistics
Total translations: 1 (1 static, 0 dynamic, 0 extended)
Outside interfaces: Serial0/0/1
Inside interfaces: GigabitEthernet0/1
Hits: 4 Misses: 4
Expired translations: 4
Dynamic mappings:
-- Inside Source
Access-list 1 pool public_access refCount 0
pool public_access: netmask 255.255.255.224
start 209.165.200.242 end 209.165.200.254
type generic, total addresses 13, allocated 0 (0%),
misses 0
Gateway#
  
```

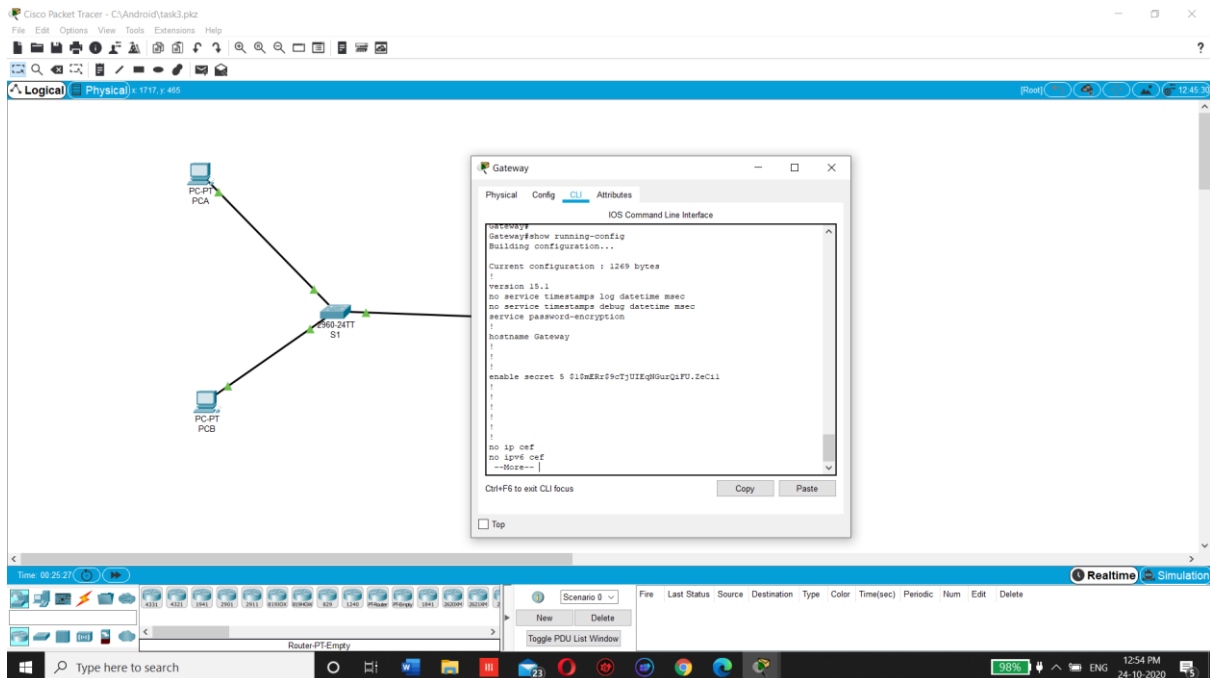
Ctrl+F6 to exit CLI focus

Copy Paste

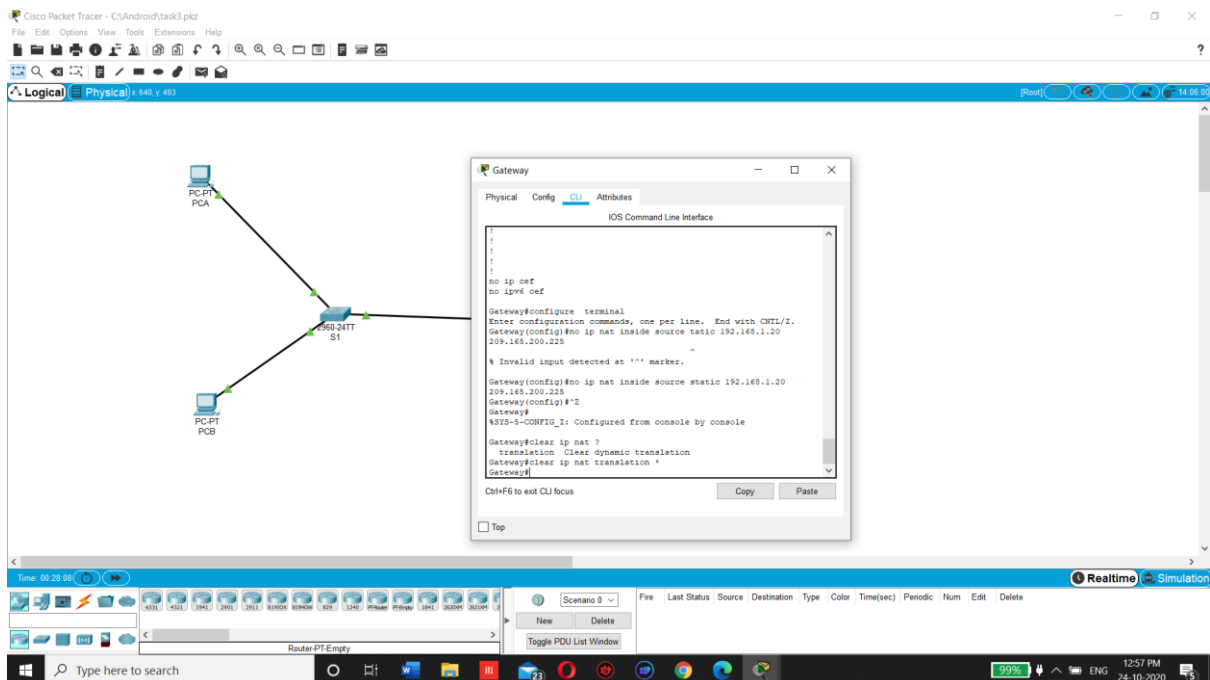
Top

Step 7

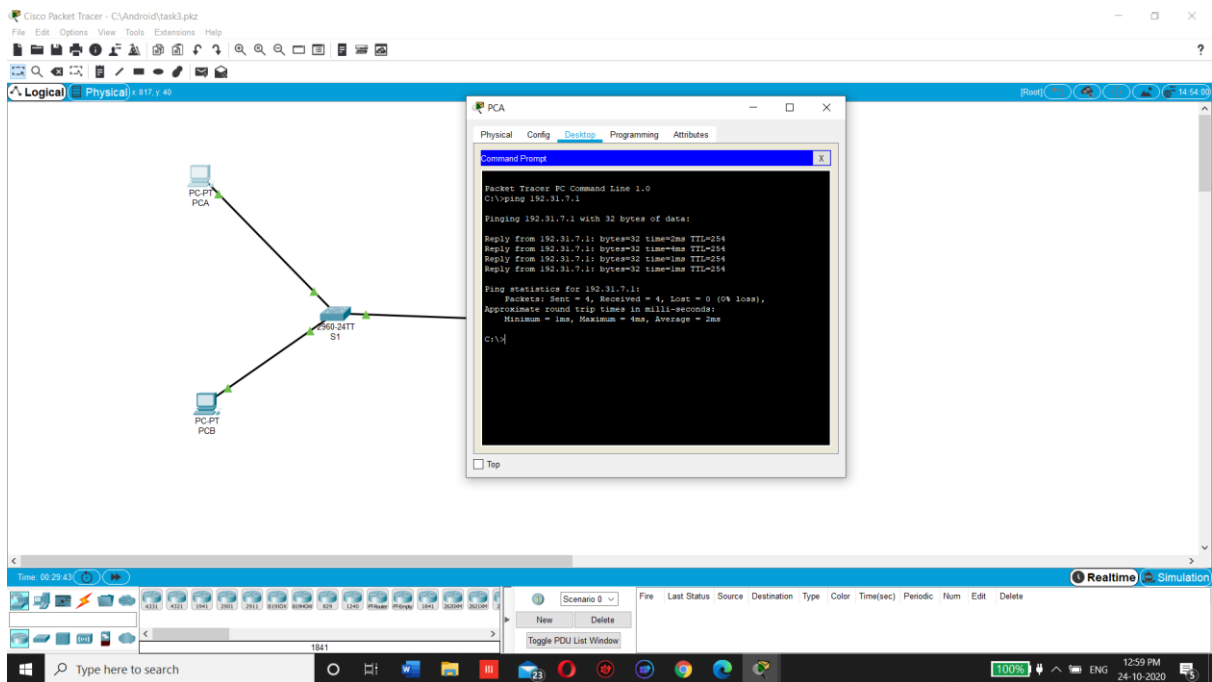
A)



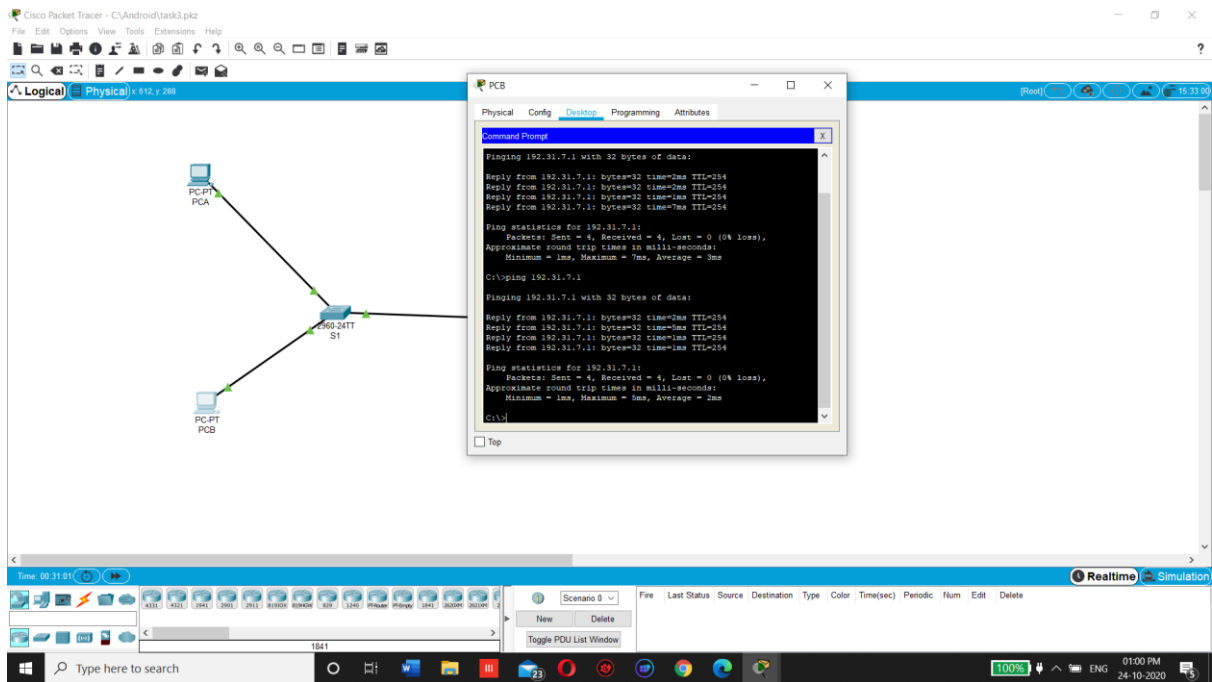
b)

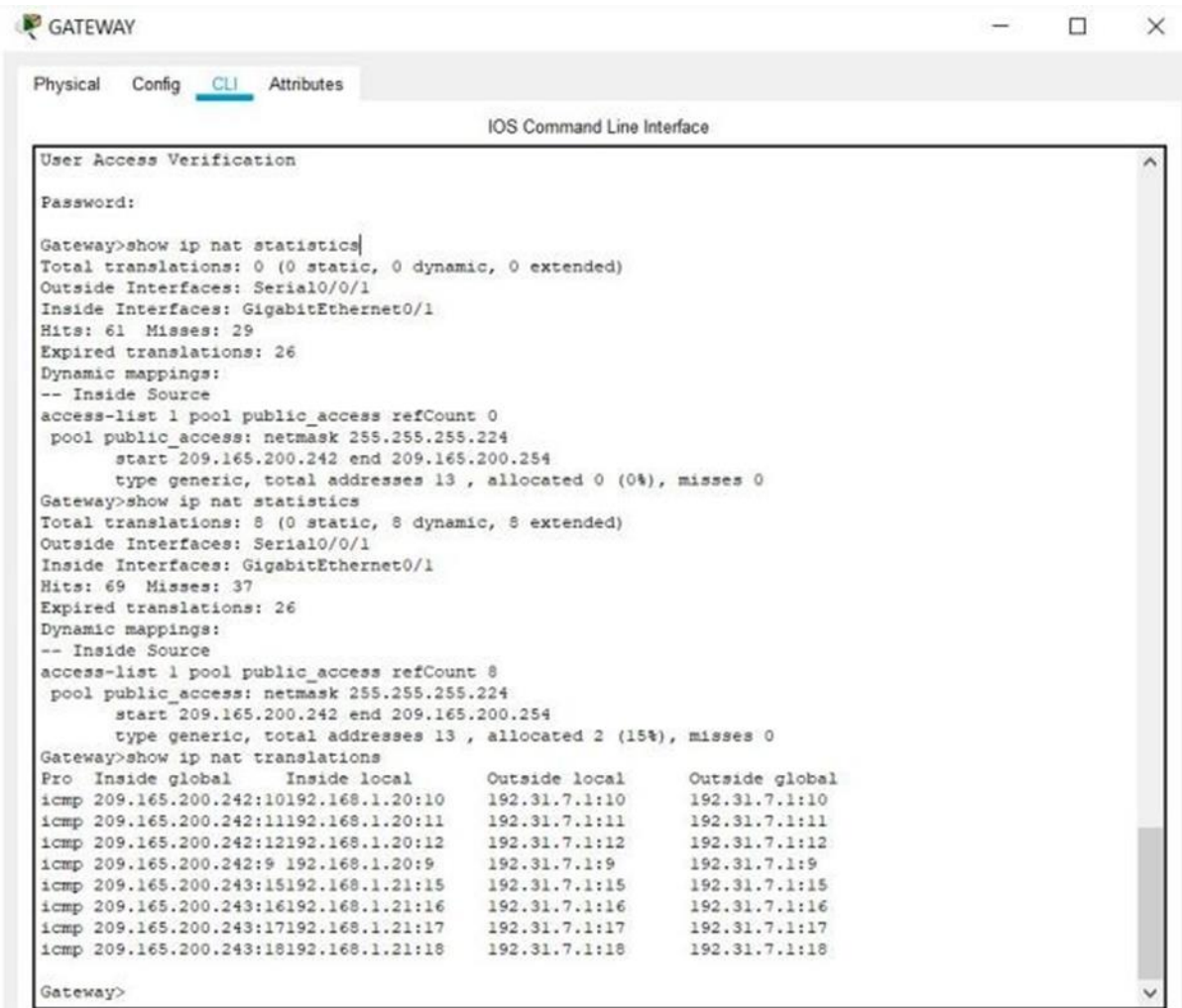
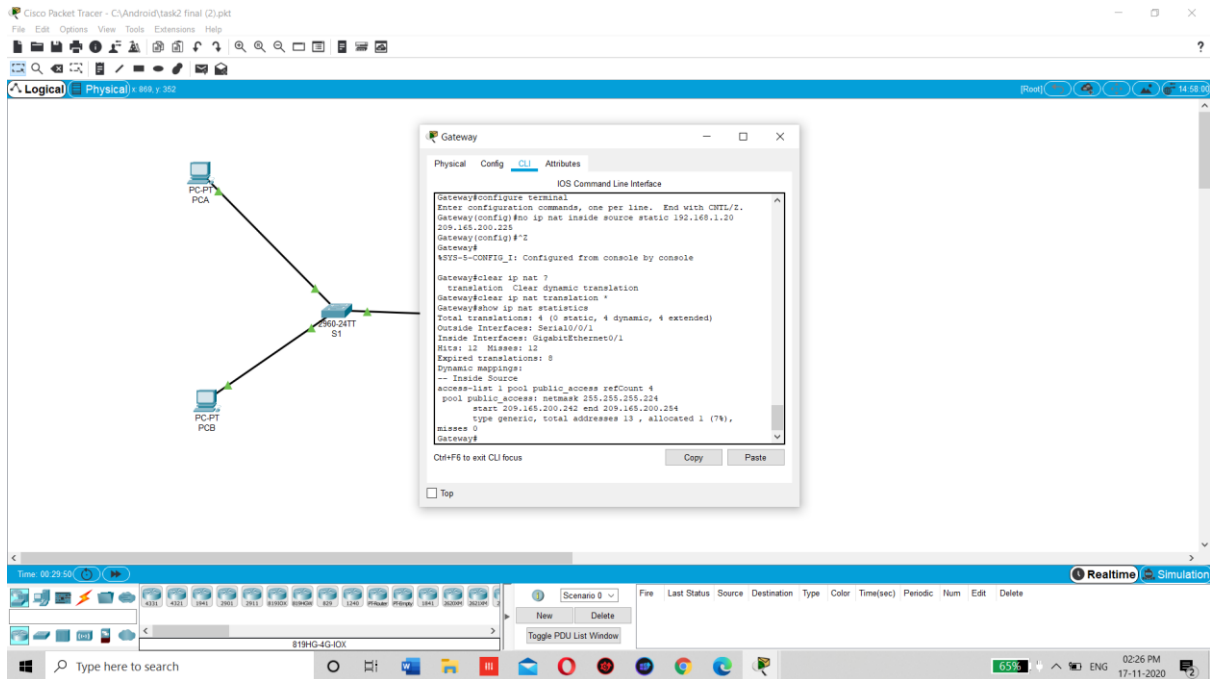


c)Pc A



Pc B





CONCLUSION: We successfully created topology and verified the end to end connectivity in CISCO Packet Tracer.