ISE 2 Lab 16/10/2020

Kunal Nalawde 2018130031 Task 1

Chirag Rana 2018130043 Task 2

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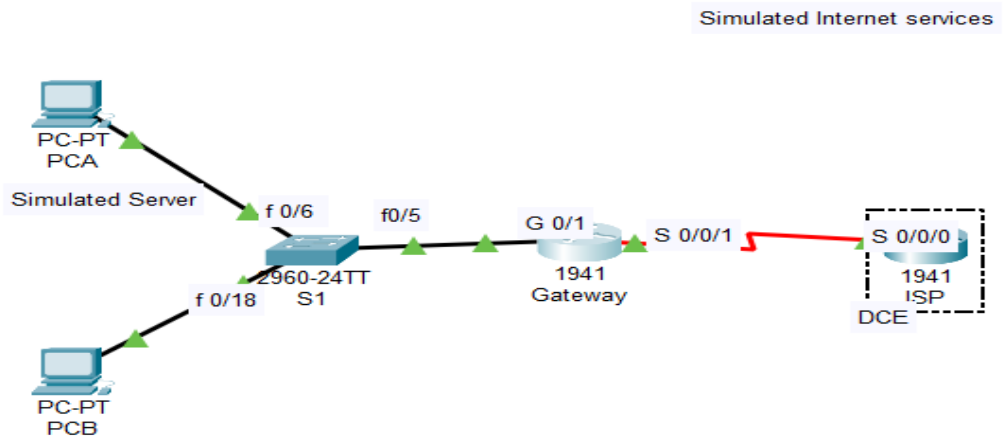
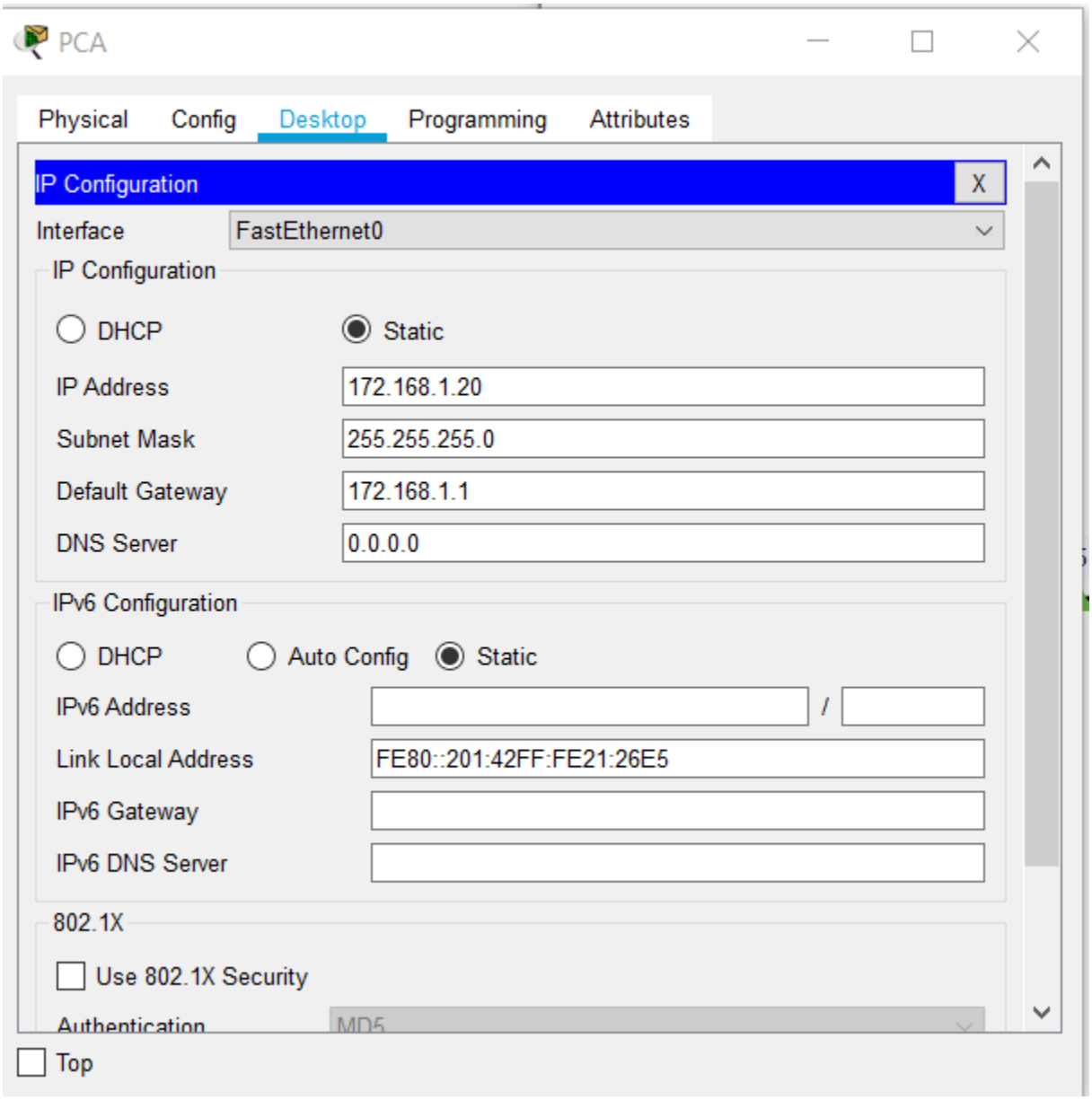
Task 1

Configurations

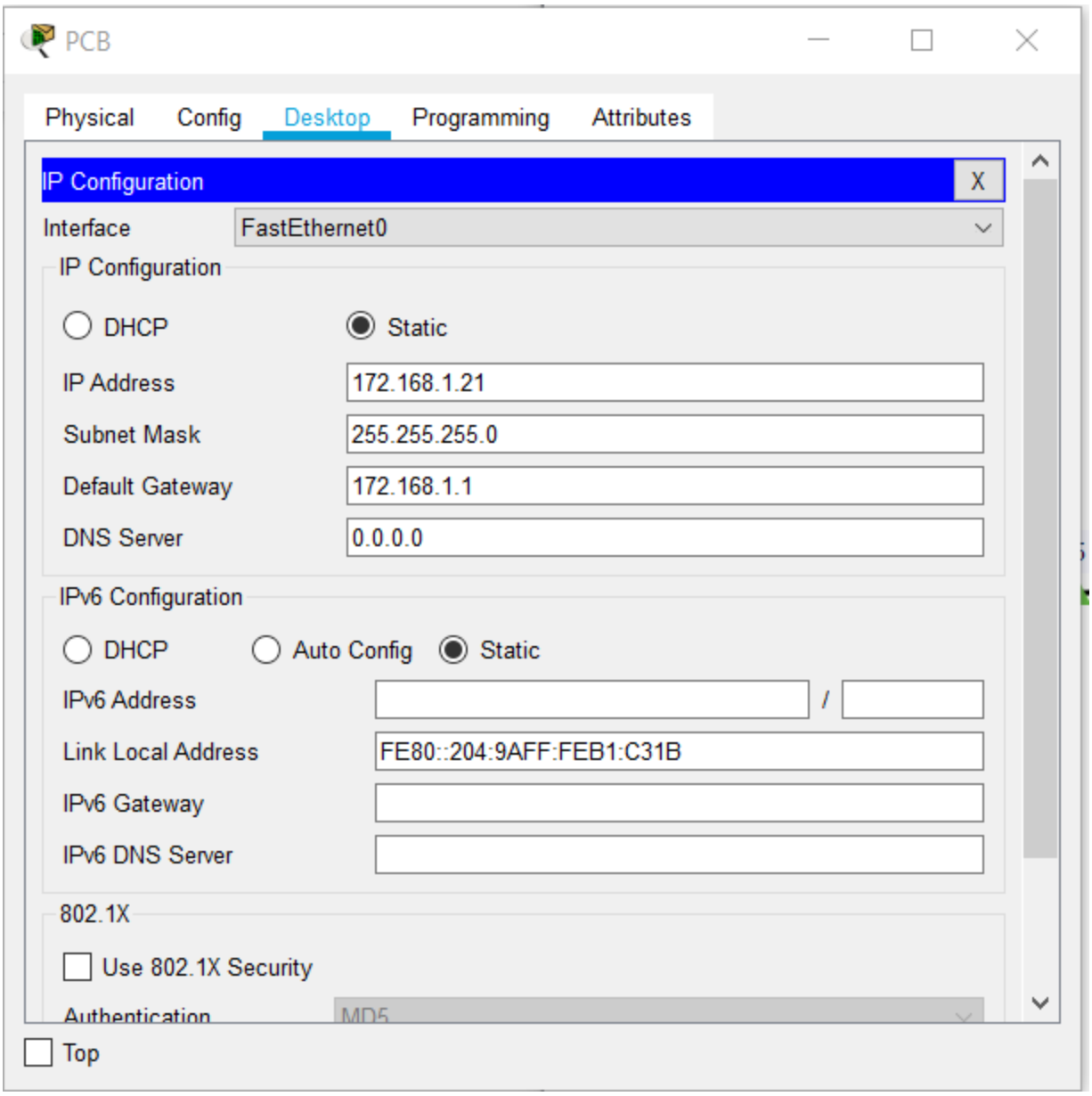
Step 1:



Step 2:

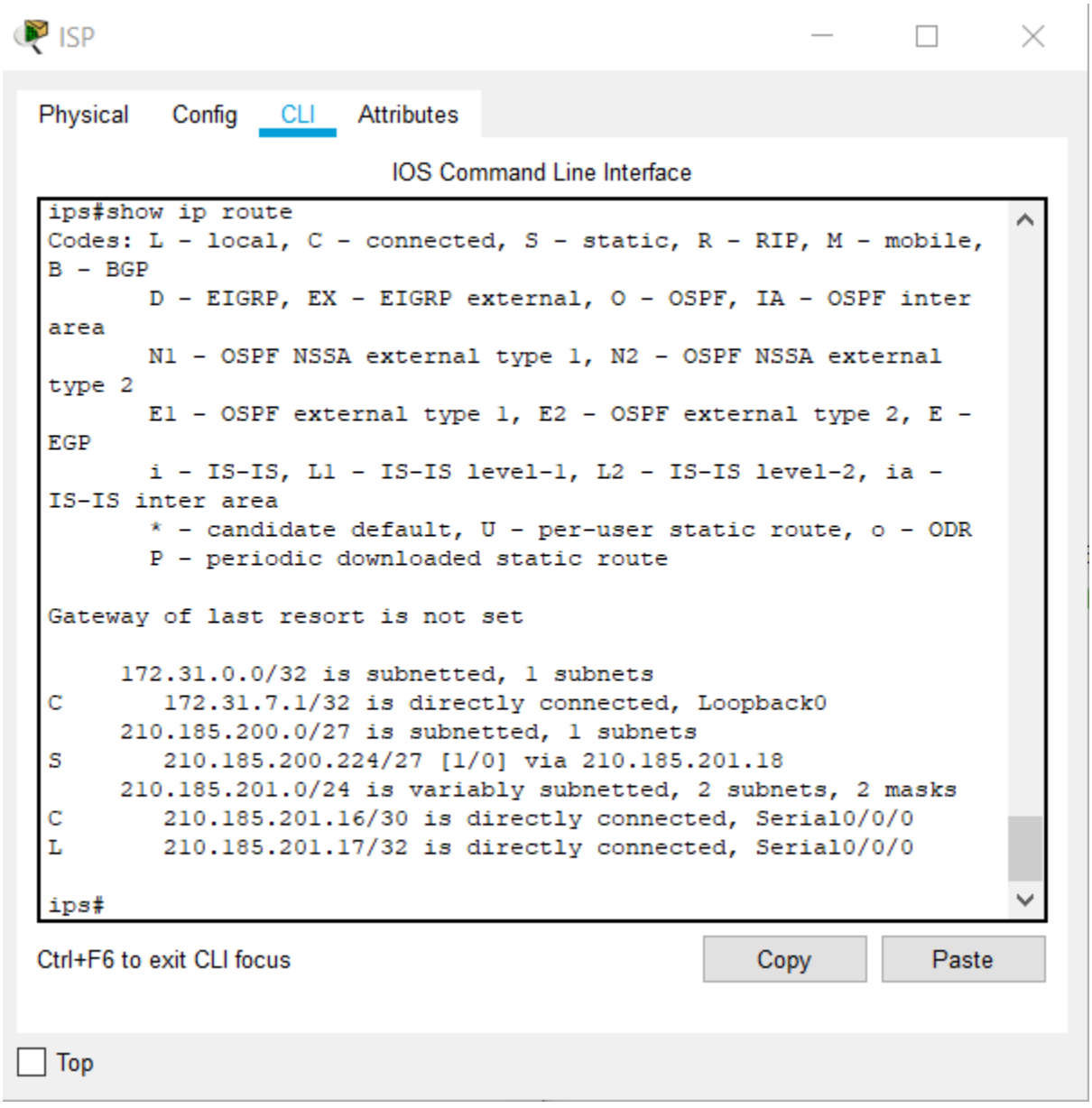


PC-A configurations



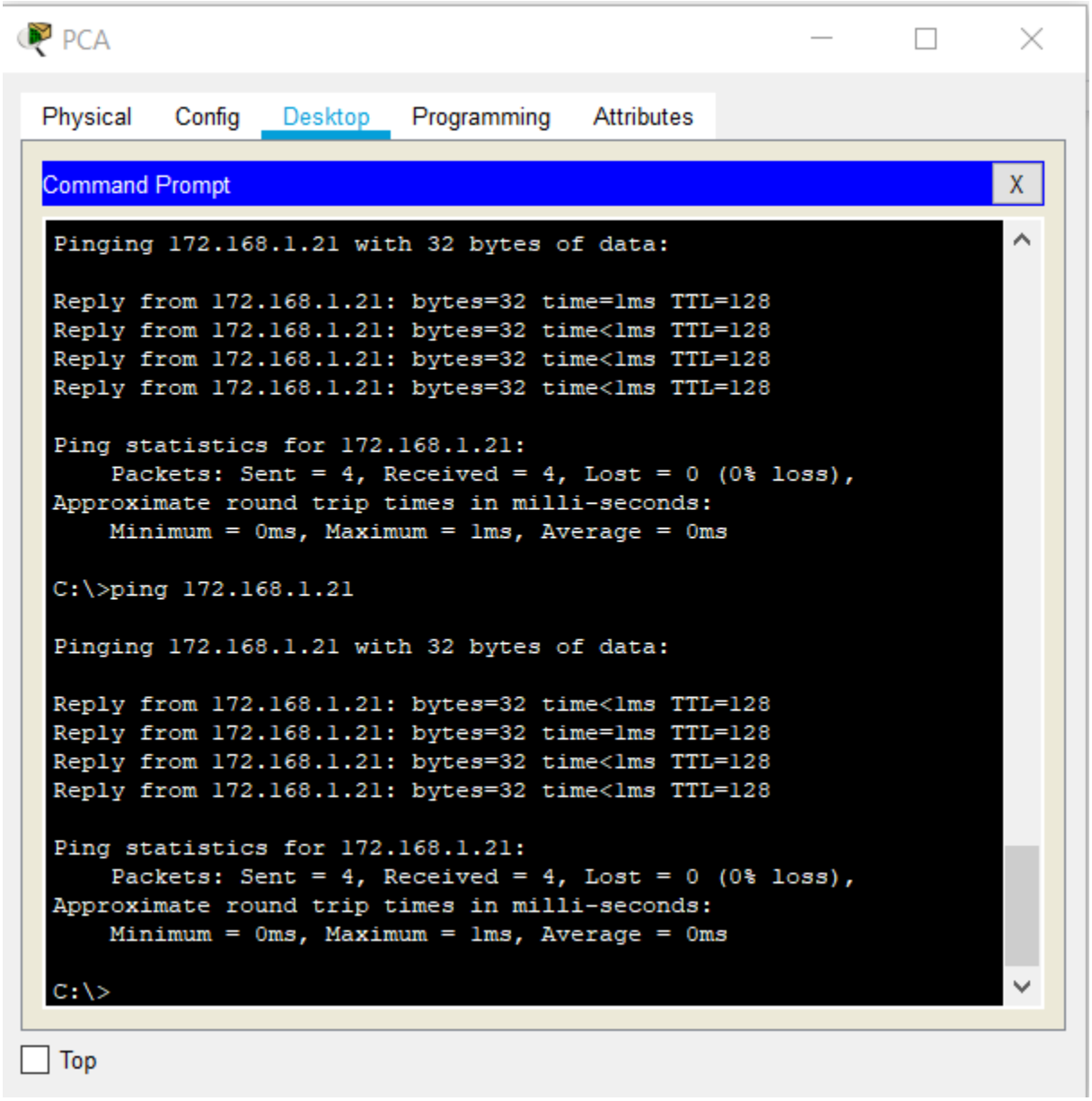
PC-B configurations

Step 3-7:



Showing all the routes

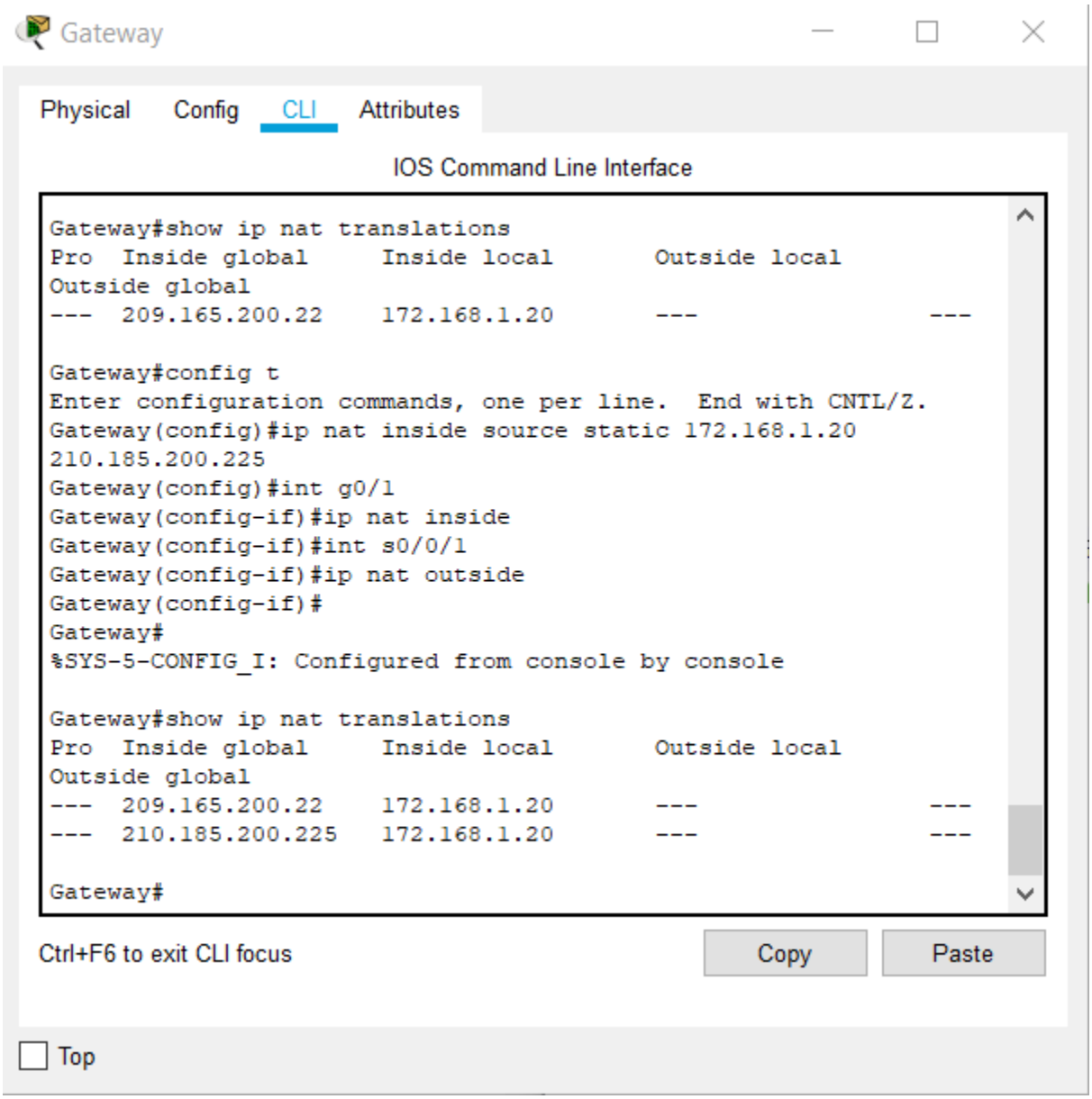
Step 8:



Pinging from PCA to PCB

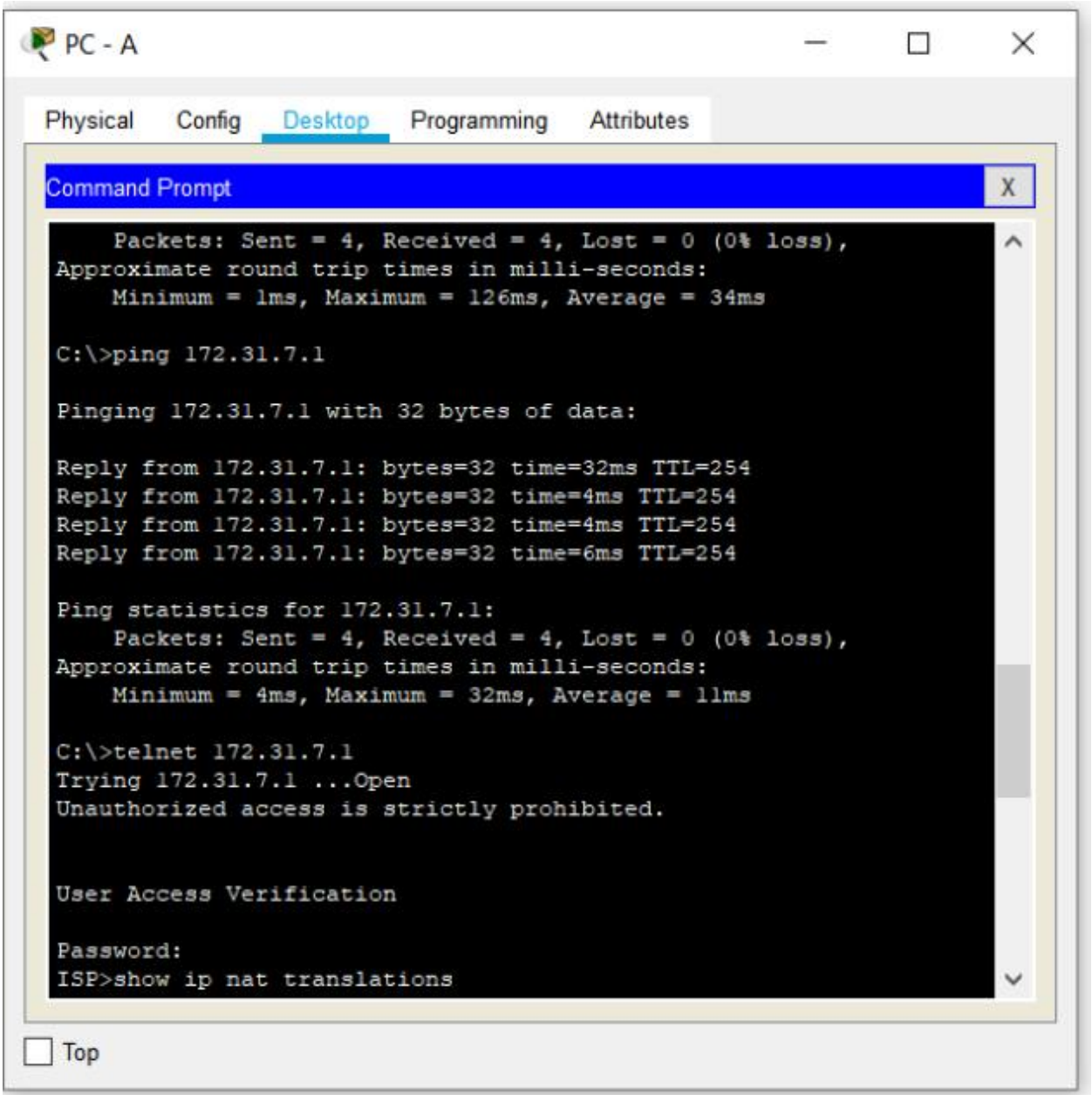
Task 2

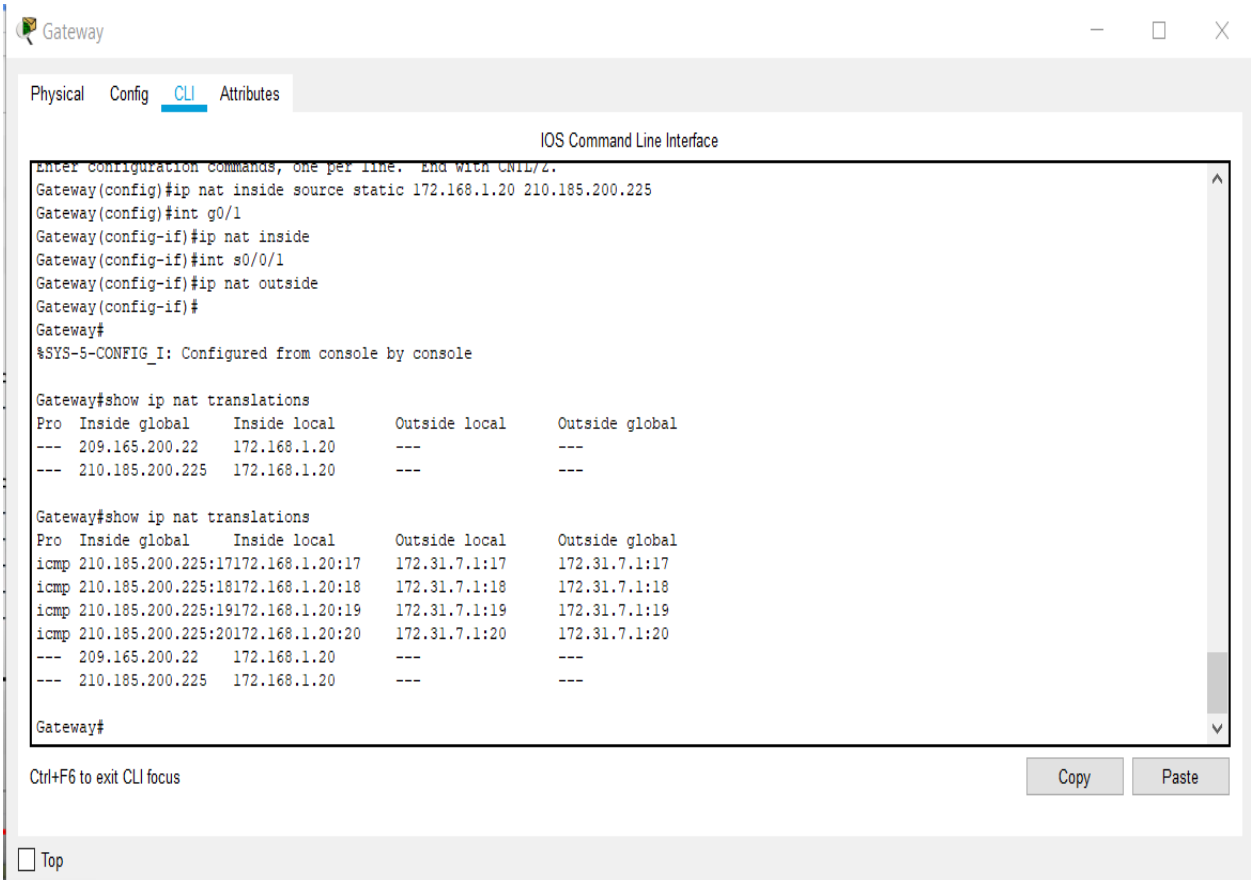
Step 1-3a:



So for 210.185.200.225 = 172.168.1.20
The inside global ip address is assigned by ISP
The inside local ip address is assigned by administrator

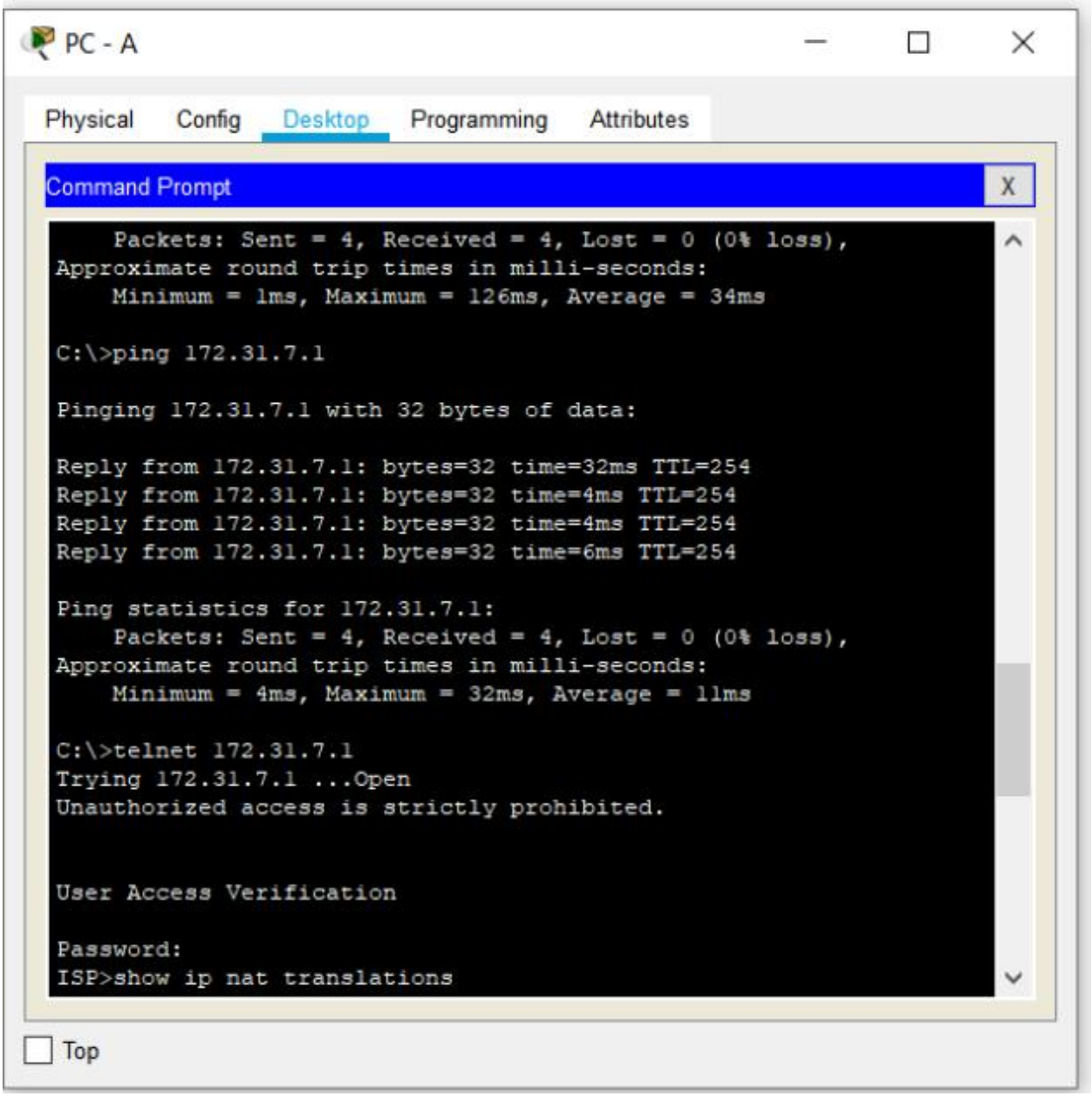
Step 3b:

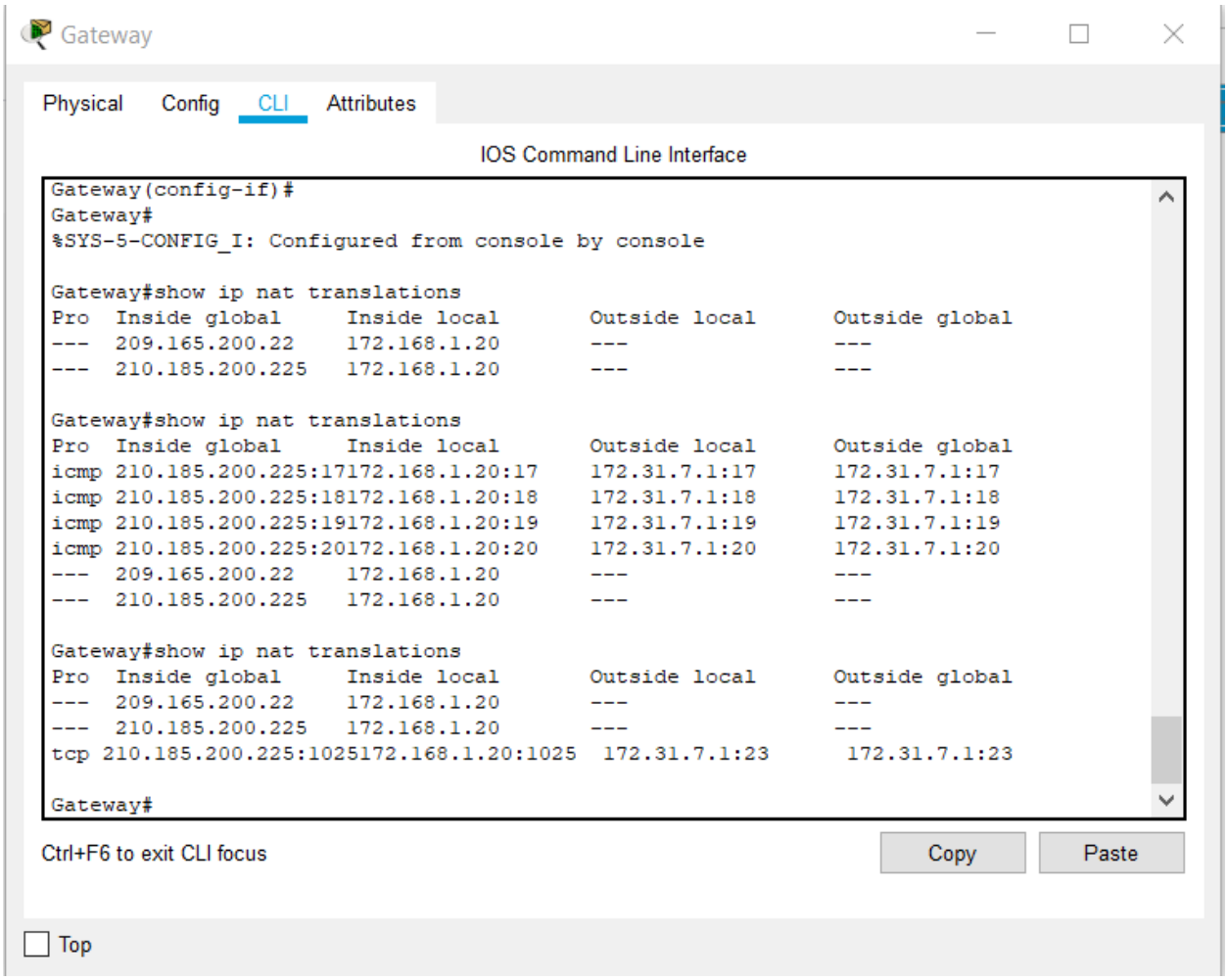

PC - A
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 126ms, Average = 34ms
C:\>ping 172.31.7.1
Pinging 172.31.7.1 with 32 bytes of data:
Reply from 172.31.7.1: bytes=32 time=32ms TTL=254
Reply from 172.31.7.1: bytes=32 time=4ms TTL=254
Reply from 172.31.7.1: bytes=32 time=4ms TTL=254
Reply from 172.31.7.1: bytes=32 time=6ms TTL=254
Ping statistics for 172.31.7.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 4ms, Maximum = 32ms, Average = 11ms
C:\>telnet 172.31.7.1
Trying 172.31.7.1 ...Open
Unauthorized access is strictly prohibited.
User Access Verification
Password:
ISP>show ip nat translations
Top



We see that ICMP packet is sent with port numbers 17, 18, 19, 20.

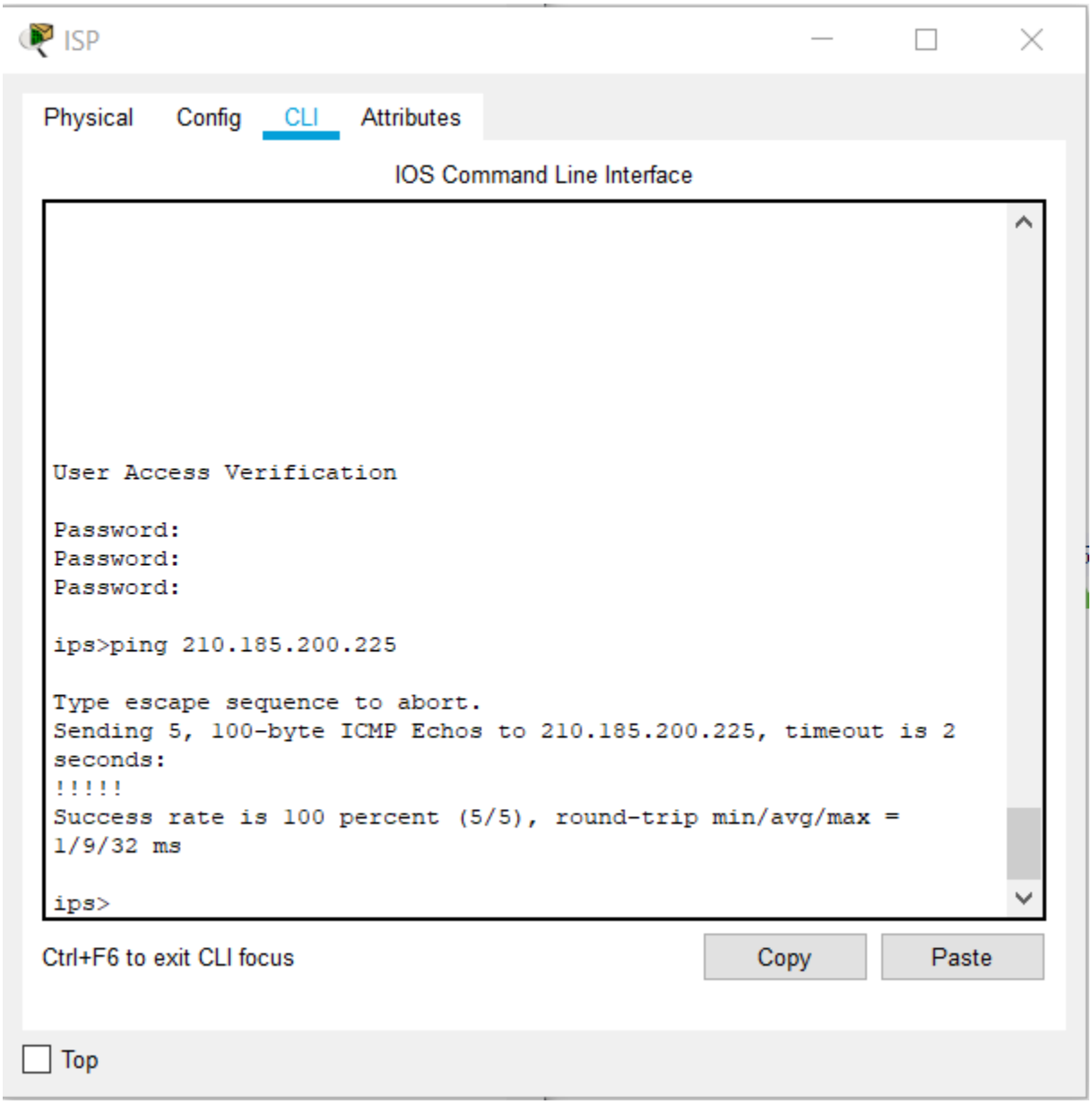
Step 3c:


PC - A
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 126ms, Average = 34ms
C:\>ping 172.31.7.1
Pinging 172.31.7.1 with 32 bytes of data:
Reply from 172.31.7.1: bytes=32 time=32ms TTL=254
Reply from 172.31.7.1: bytes=32 time=4ms TTL=254
Reply from 172.31.7.1: bytes=32 time=4ms TTL=254
Reply from 172.31.7.1: bytes=32 time=6ms TTL=254
Ping statistics for 172.31.7.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 4ms, Maximum = 32ms, Average = 11ms
C:\>telnet 172.31.7.1
Trying 172.31.7.1 ...Open
Unauthorized access is strictly prohibited.
User Access Verification
Password:
ISP>show ip nat translations
Top



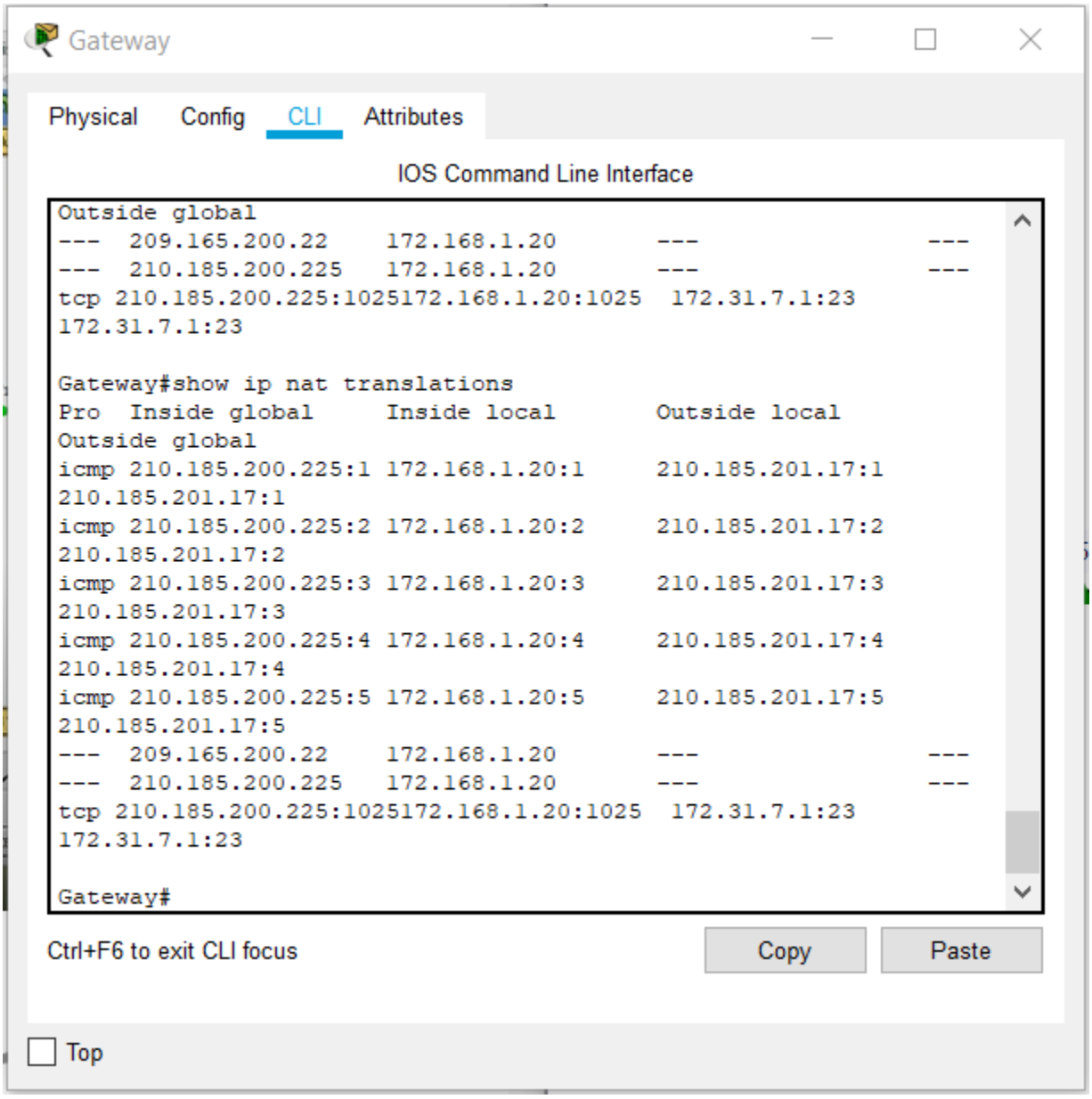
Tcp protocol is used for sending the packet port number is 1025 with outside local 23 port numbers.

Step 3d:

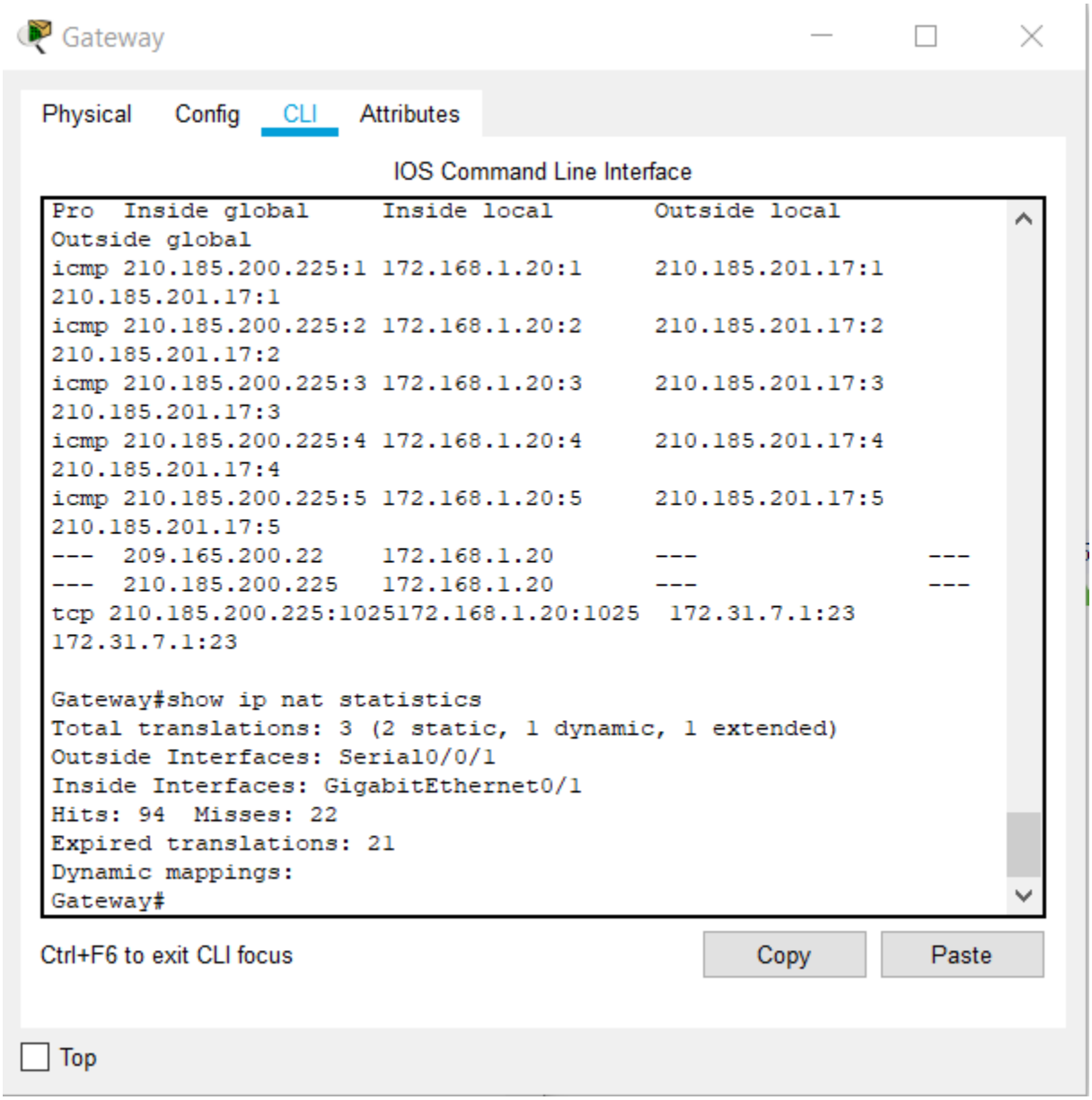


Pinging ISP to PC-A

Step 3e:

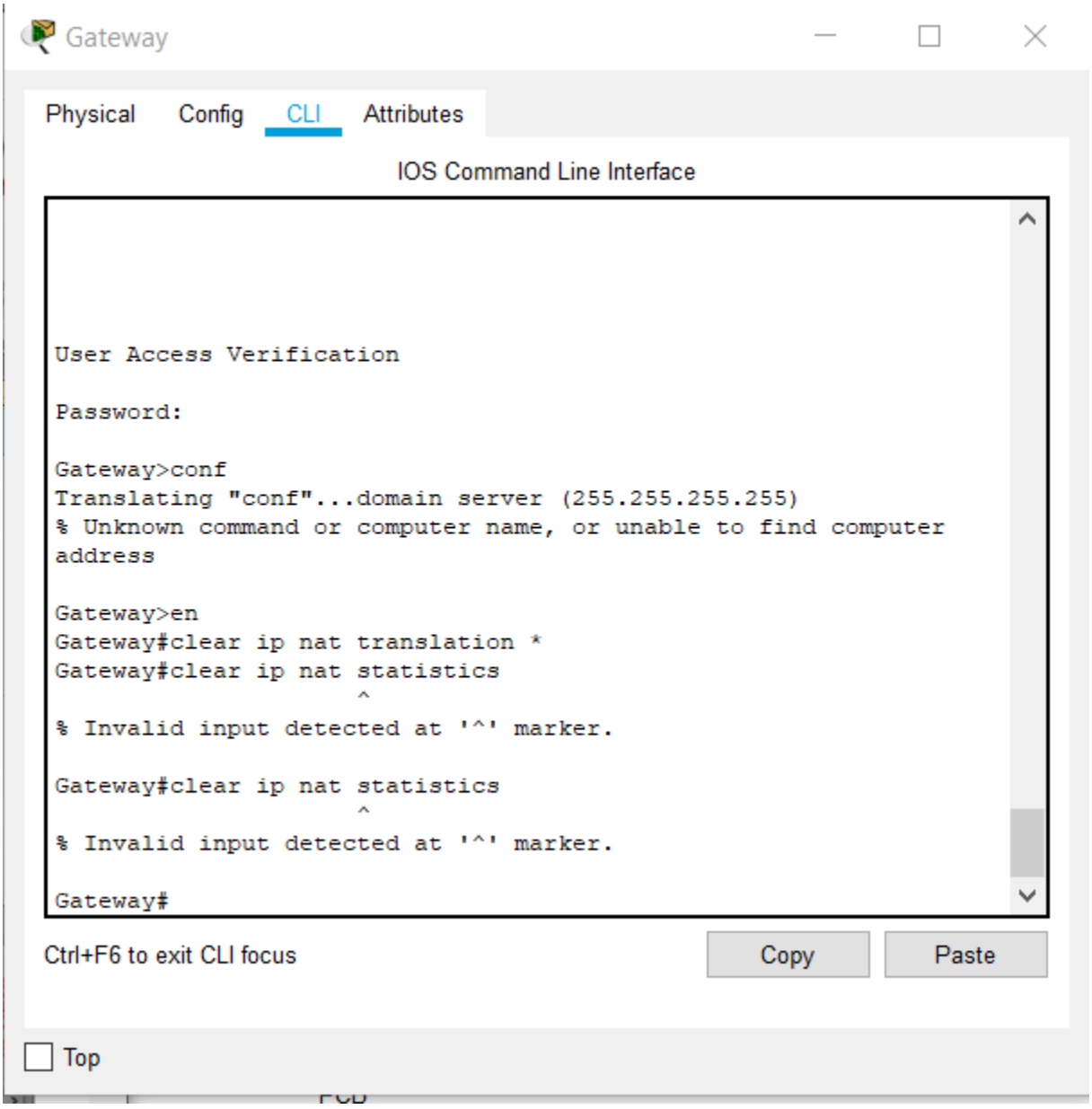

Gateway
Physical
Config
CLI
Attributes
IOS Command Line Interface
Outside global
--- 209.165.200.22 172.168.1.20 --- ---
--- 210.185.200.225 172.168.1.20 --- ---
tcp 210.185.200.225:1025172.168.1.20:1025 172.31.7.1:23
172.31.7.1:23
Gateway#show ip nat translations
Pro Inside global Inside local Outside local
Outside global
icmp 210.185.200.225:1 172.168.1.20:1 210.185.201.17:1
210.185.201.17:1
icmp 210.185.200.225:2 172.168.1.20:2 210.185.201.17:2
210.185.201.17:2
icmp 210.185.200.225:3 172.168.1.20:3 210.185.201.17:3
210.185.201.17:3
icmp 210.185.200.225:4 172.168.1.20:4 210.185.201.17:4
210.185.201.17:4
icmp 210.185.200.225:5 172.168.1.20:5 210.185.201.17:5
210.185.201.17:5
--- 209.165.200.22 172.168.1.20 --- ---
--- 210.185.200.225 172.168.1.20 --- ---
tcp 210.185.200.225:1025172.168.1.20:1025 172.31.7.1:23
172.31.7.1:23
Gateway#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

Step 3f:

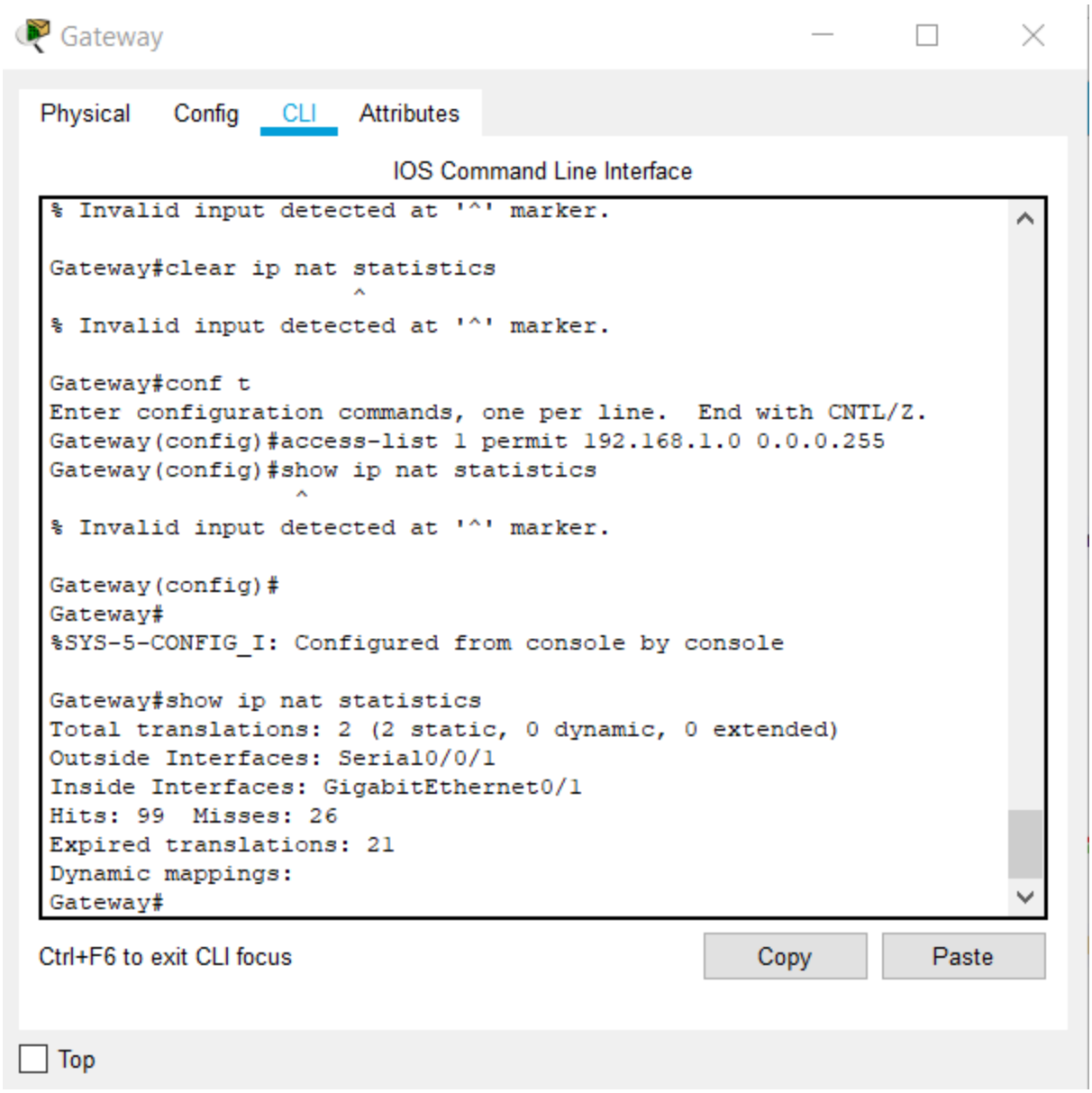

Gateway
Physical
Config
CLI
Attributes
IOS Command Line Interface
Pro Inside global Inside local Outside local
Outside global
icmp 210.185.200.225:1 172.168.1.20:1 210.185.201.17:1
210.185.201.17:1
icmp 210.185.200.225:2 172.168.1.20:2 210.185.201.17:2
210.185.201.17:2
icmp 210.185.200.225:3 172.168.1.20:3 210.185.201.17:3
210.185.201.17:3
icmp 210.185.200.225:4 172.168.1.20:4 210.185.201.17:4
210.185.201.17:4
icmp 210.185.200.225:5 172.168.1.20:5 210.185.201.17:5
210.185.201.17:5
--- 209.165.200.22 172.168.1.20 --- ---
--- 210.185.200.225 172.168.1.20 --- ---
tcp 210.185.200.225:1025172.168.1.20:1025 172.31.7.1:23
172.31.7.1:23
Gateway#show ip nat statistics
Total translations: 3 (2 static, 1 dynamic, 1 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 94 Misses: 22
Expired translations: 21
Dynamic mappings:
Gateway#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

Task 3

Step 1:

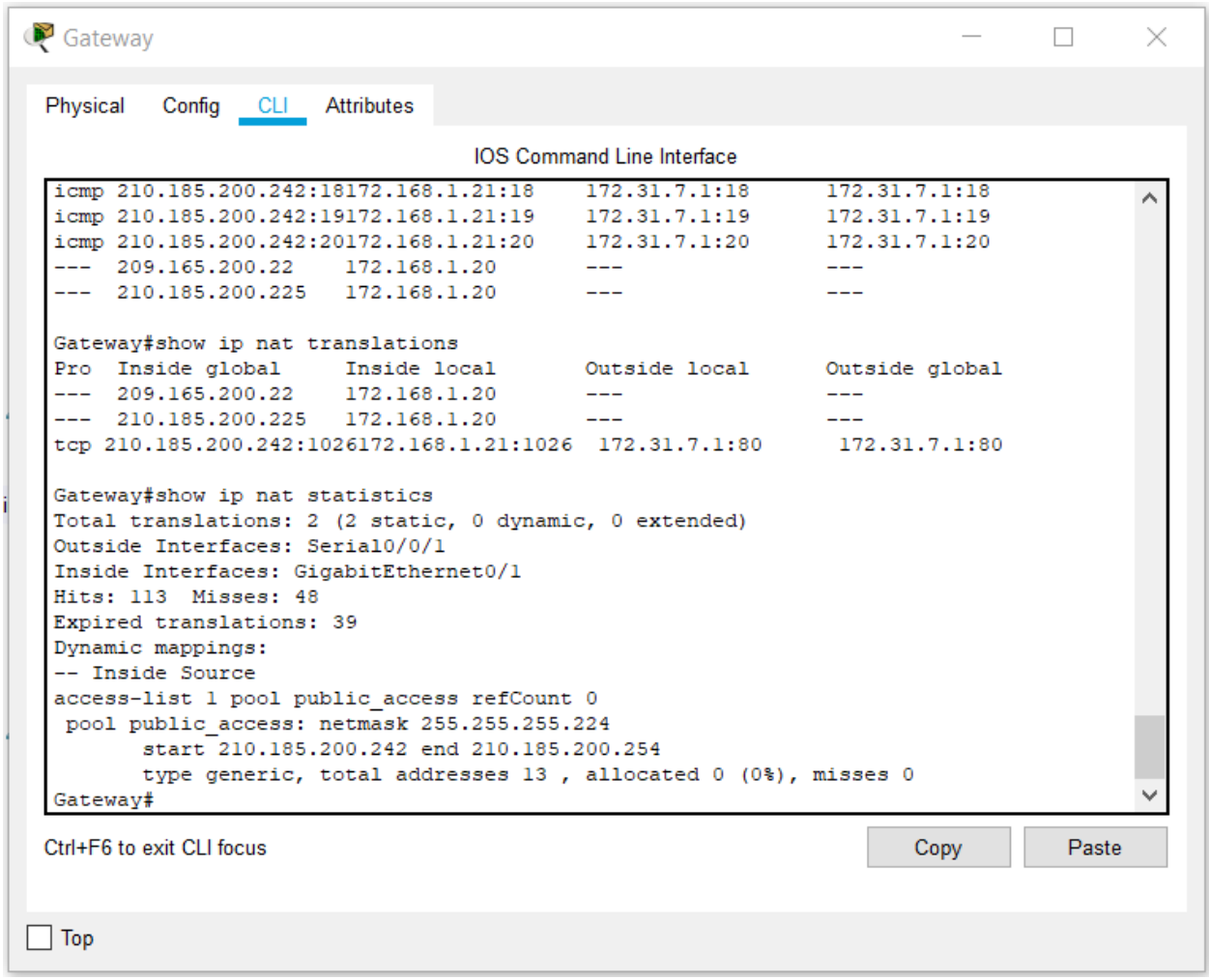


Step 2:

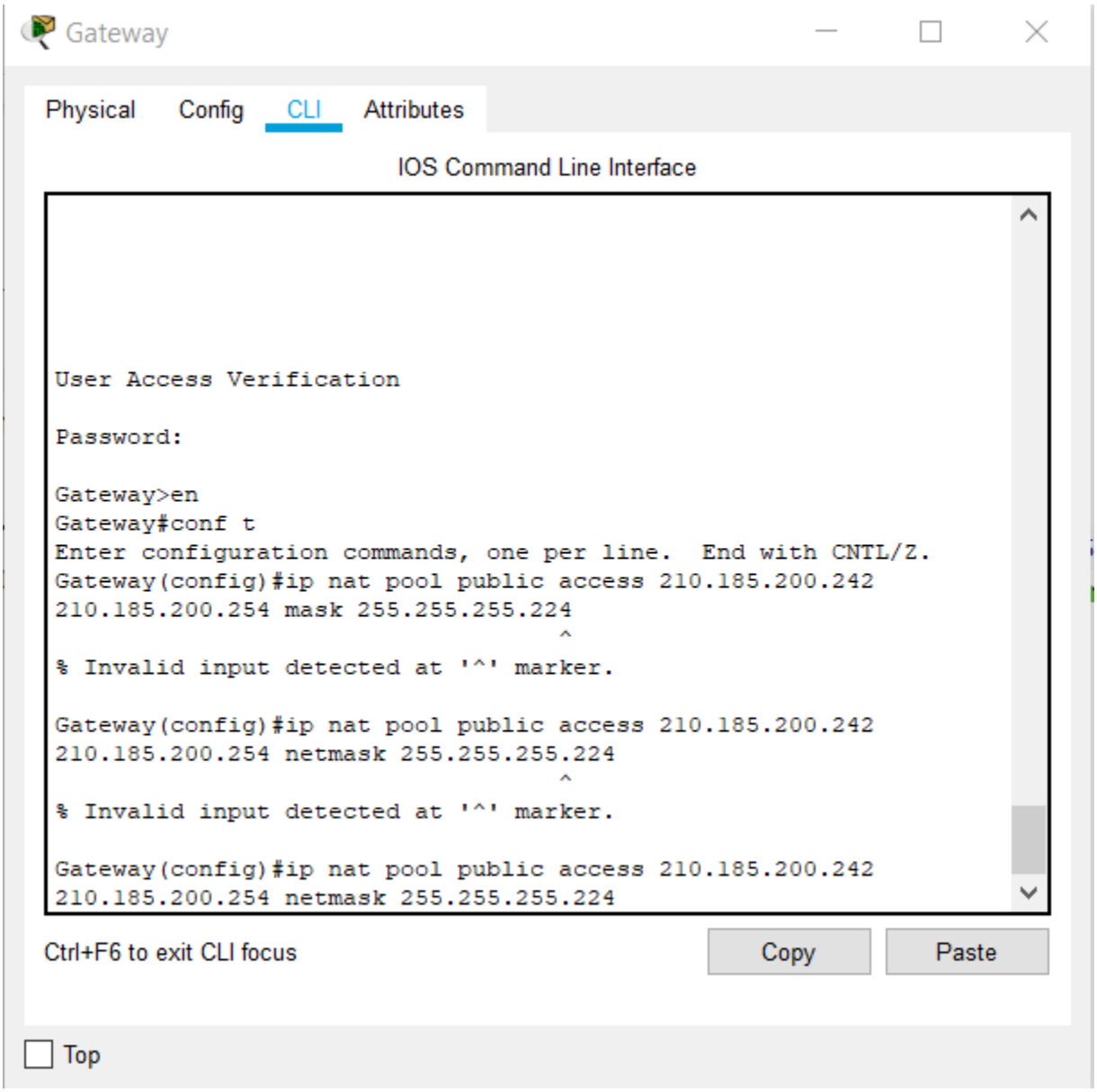


Providing the access_list name

Step 3:

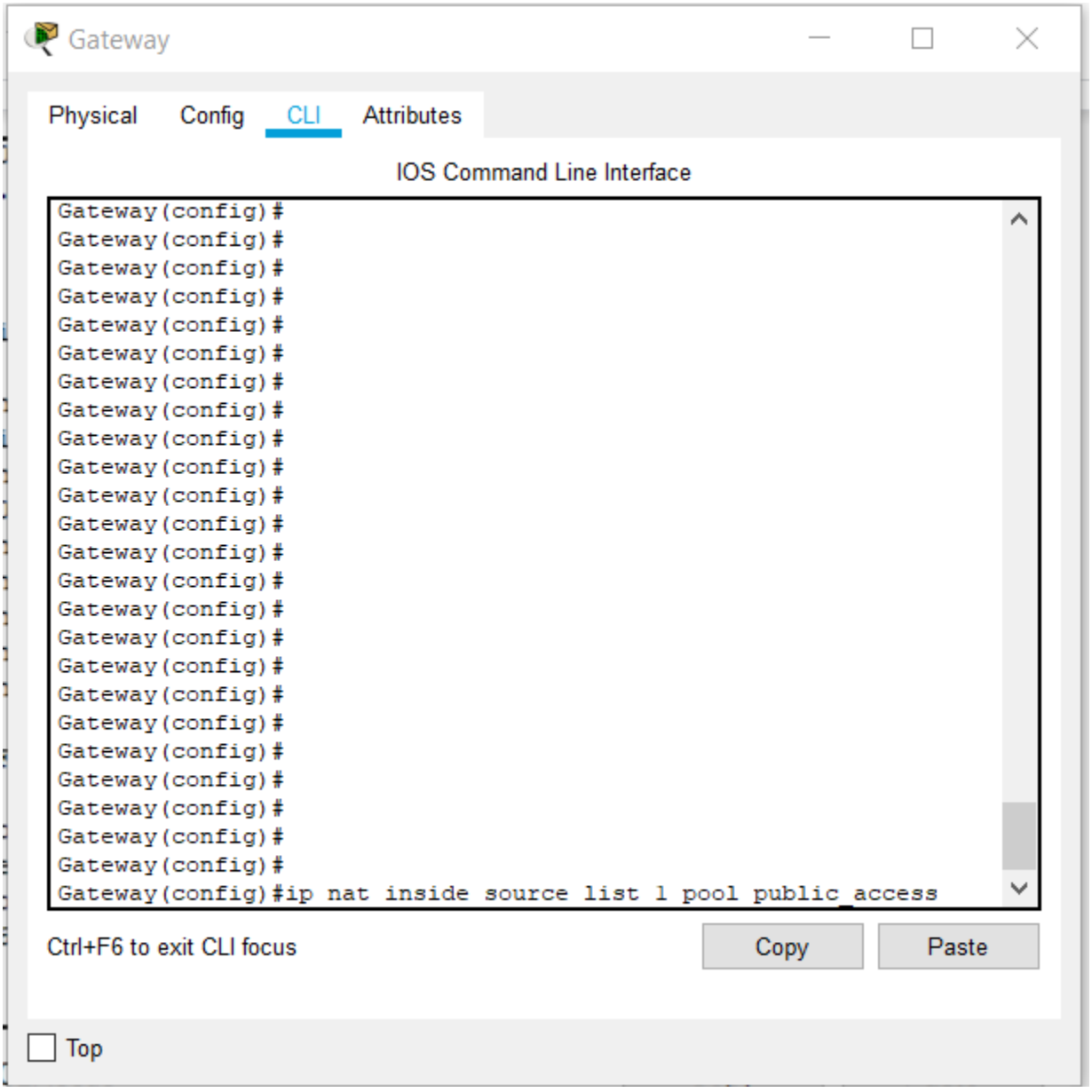

Gateway
Physical
Config
CLI
Attributes
IOS Command Line Interface
icmp 210.185.200.242:18172.168.1.21:18 172.31.7.1:18 172.31.7.1:18
icmp 210.185.200.242:19172.168.1.21:19 172.31.7.1:19 172.31.7.1:19
icmp 210.185.200.242:20172.168.1.21:20 172.31.7.1:20 172.31.7.1:20
--- 209.165.200.22 172.168.1.20 --- ---
--- 210.185.200.225 172.168.1.20 --- ---
Gateway#show ip nat translations
Pro Inside global Inside local Outside local Outside global
--- 209.165.200.22 172.168.1.20 --- ---
--- 210.185.200.225 172.168.1.20 --- ---
tcp 210.185.200.242:1026172.168.1.21:1026 172.31.7.1:80 172.31.7.1:80
Gateway#show ip nat statistics
Total translations: 2 (2 static, 0 dynamic, 0 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 113 Misses: 48
Expired translations: 39
Dynamic mappings:
-- Inside Source
access-list 1 pool public_access refCount 0
pool public_access: netmask 255.255.255.224
start 210.185.200.242 end 210.185.200.254
type generic, total addresses 13 , allocated 0 (0%), misses 0
Gateway#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

Step 4:



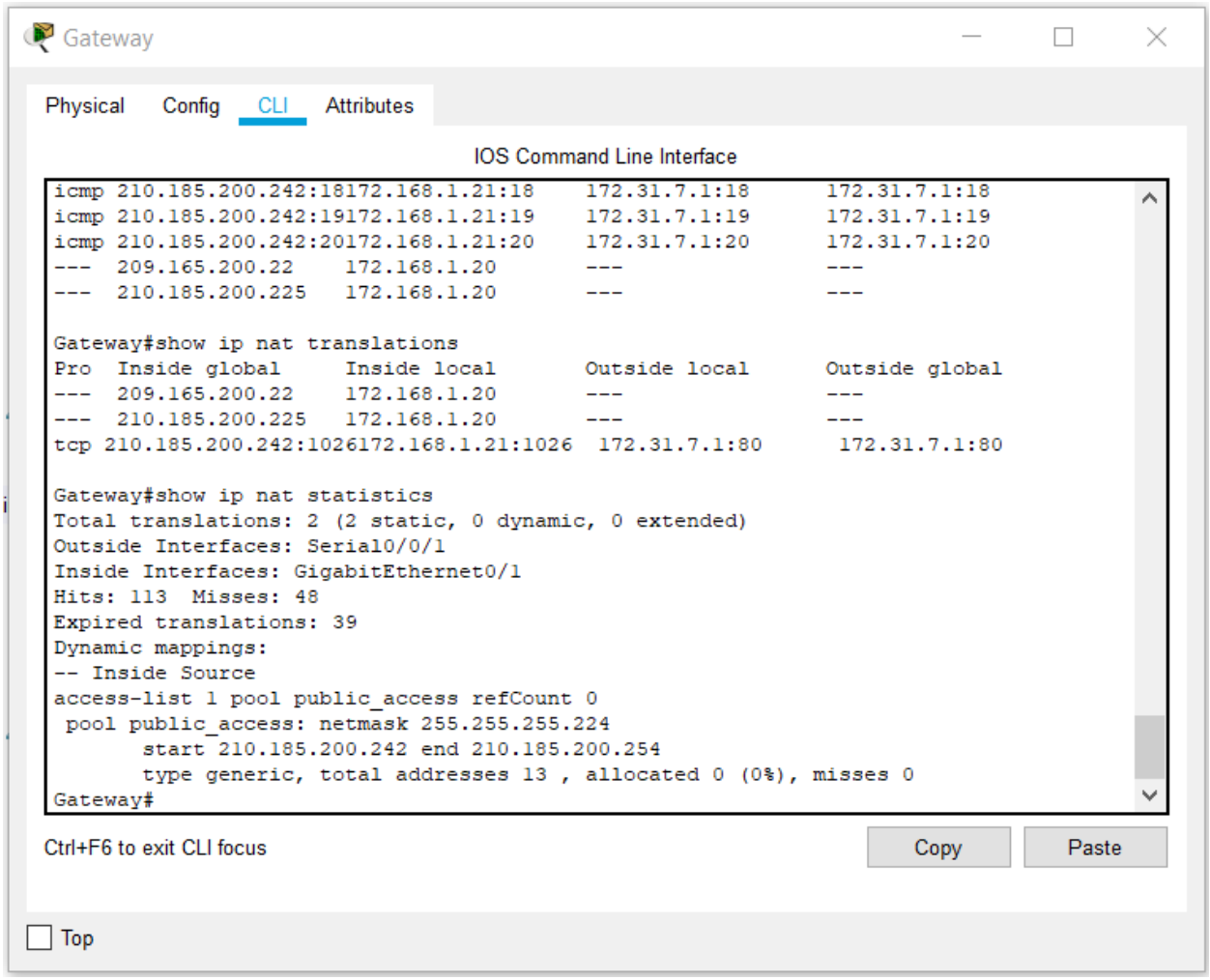
Providing the pool of IP address.

Step 5:



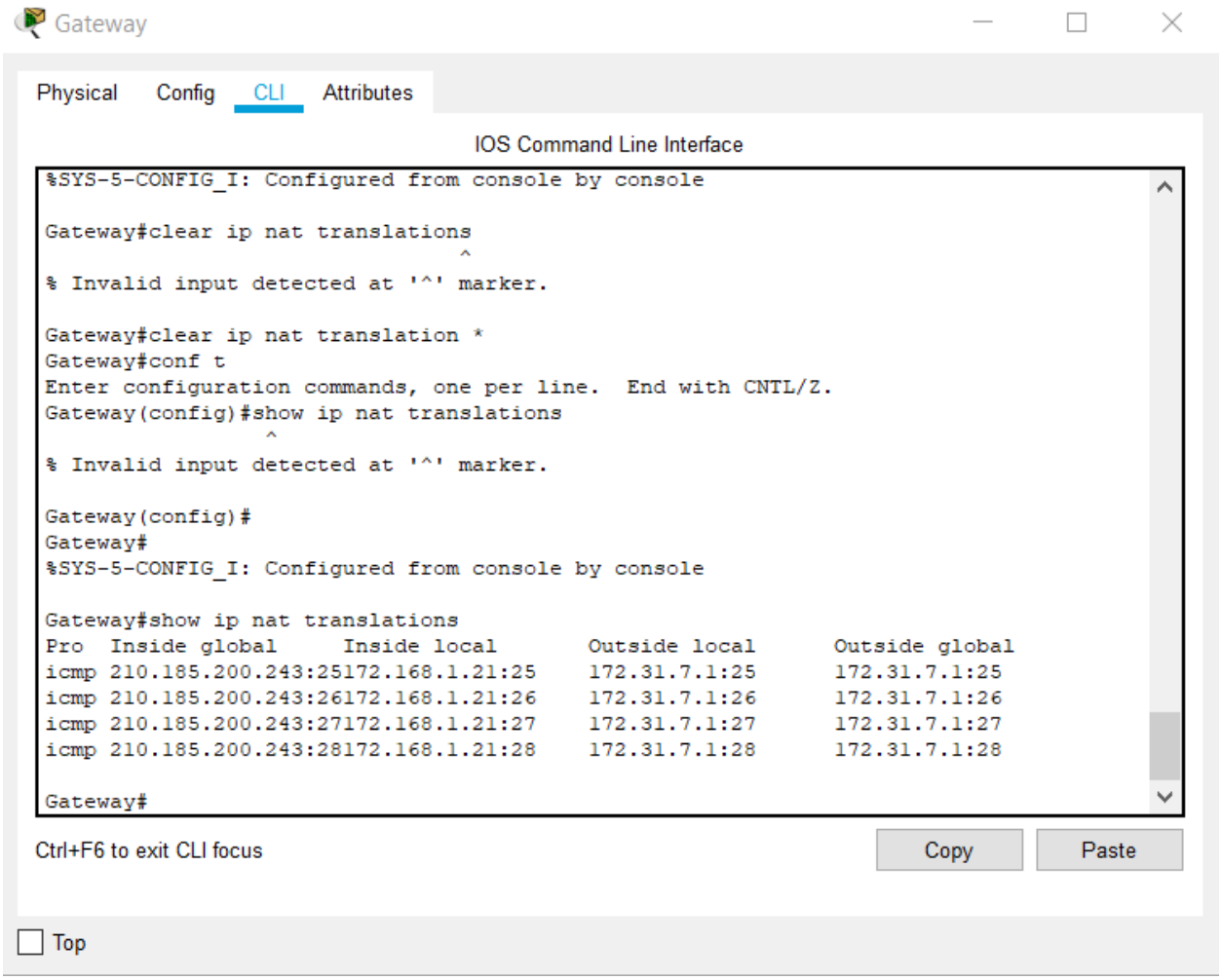
Connecting the public_access pool and the source list

Step 6a:



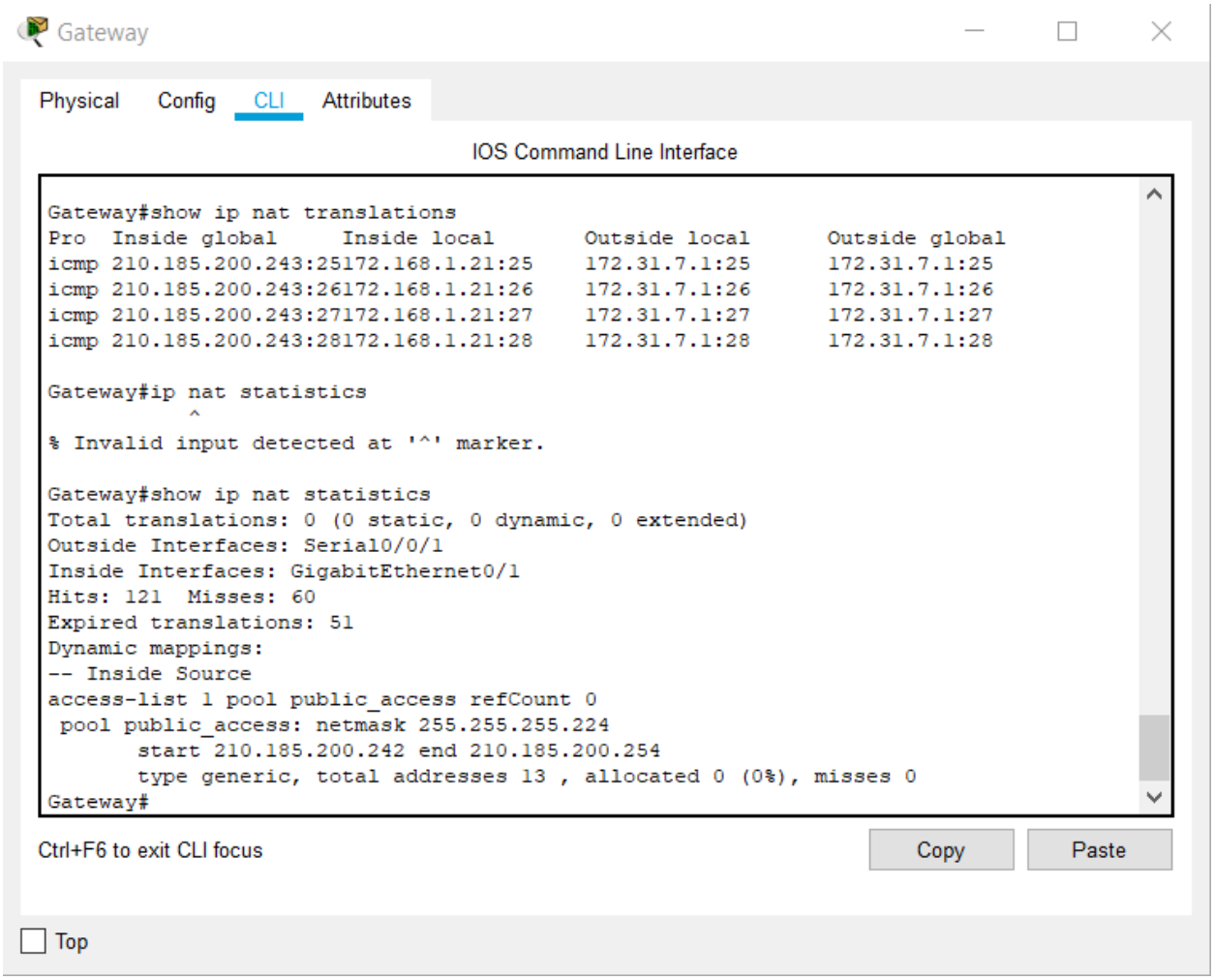
172.168.1.21 = 210.185.200.225
The port number was 1025

Step 6c:

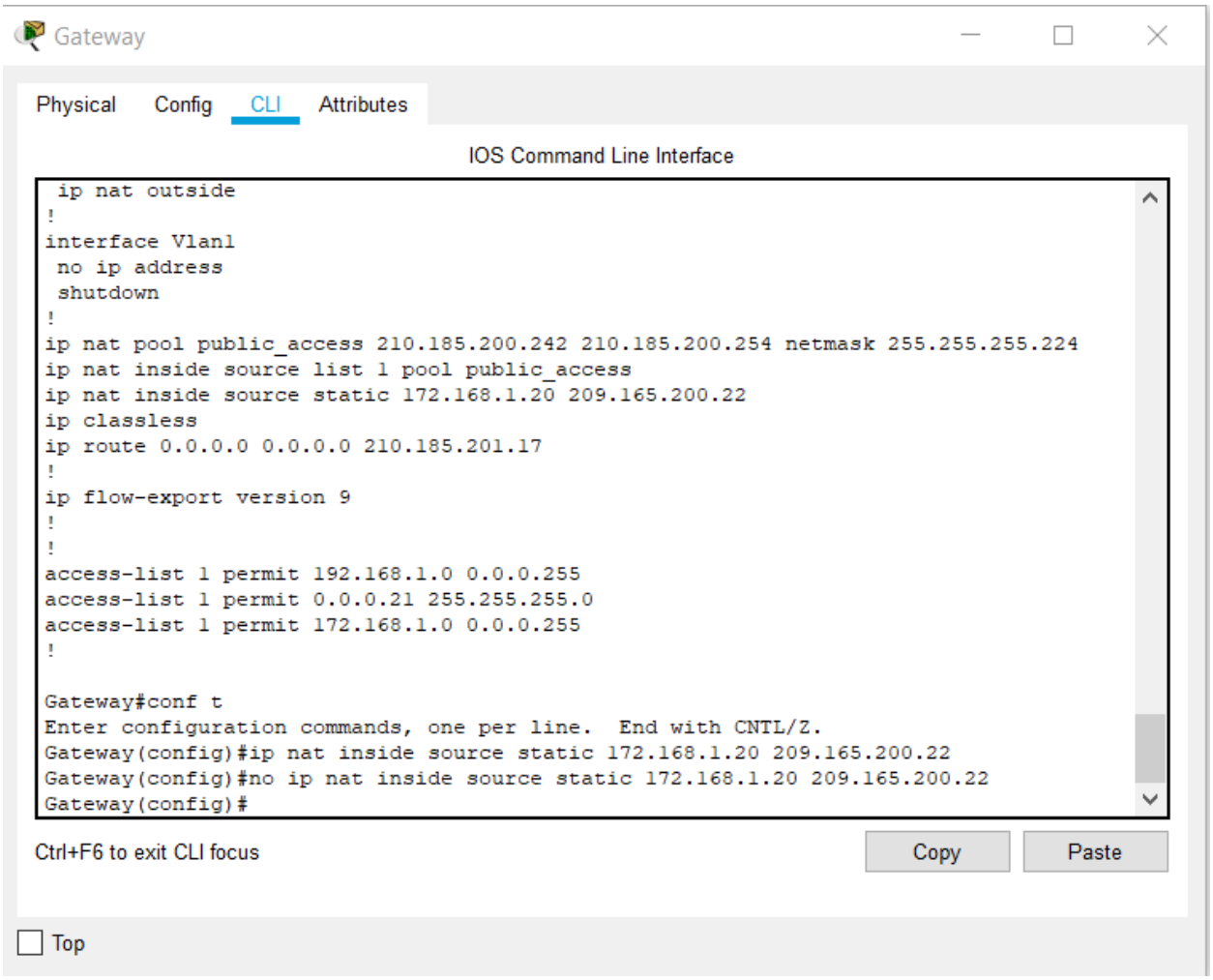


Translation table from B using ICMP port number 25, 26, 27, 28 outside also same i.e. 25, 26, 27, 28

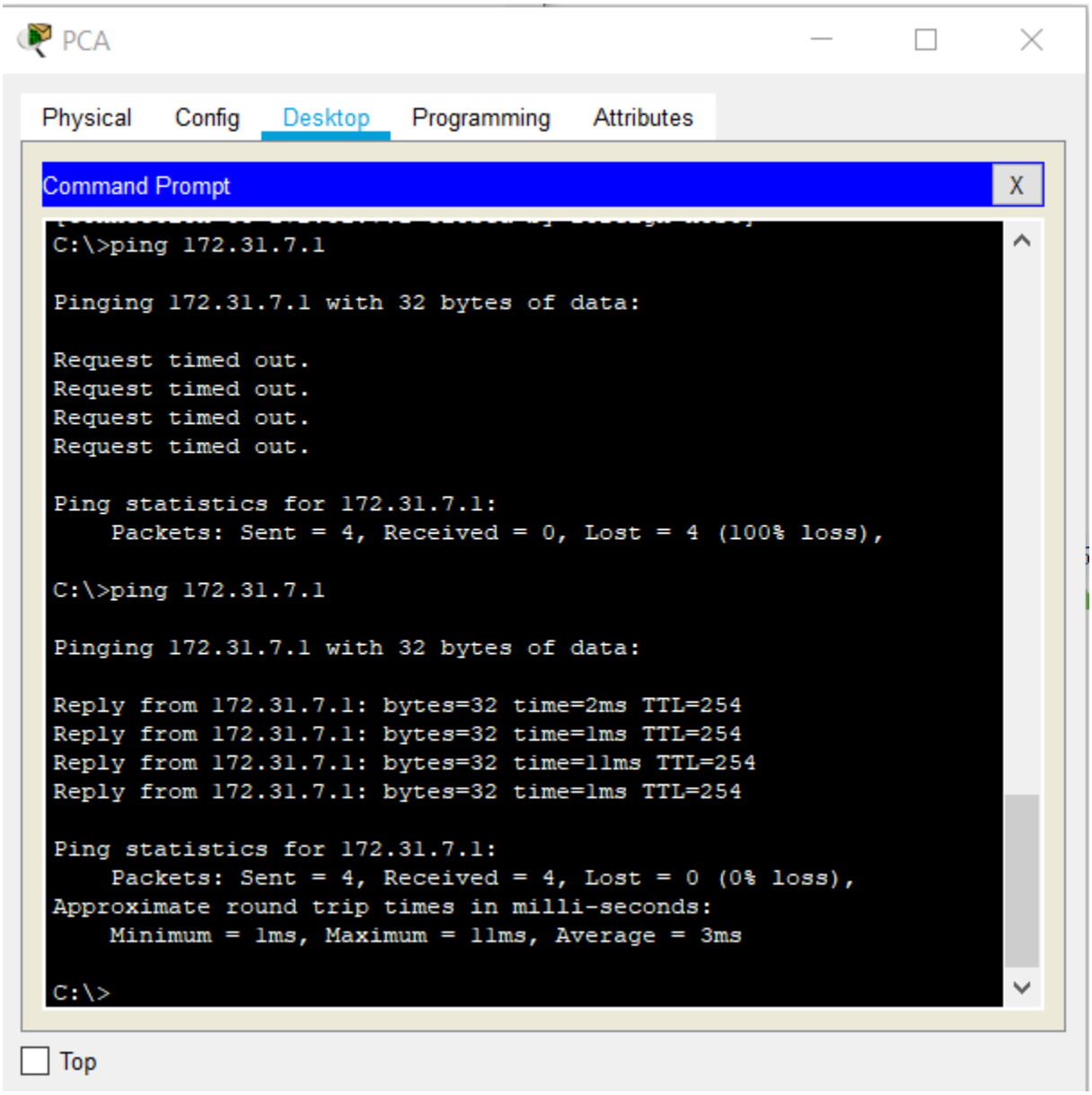
Step 6d:


Gateway
Physical
Config
CLI
Attributes
IOS Command Line Interface
Gateway#show ip nat translations
Pro Inside global Inside local Outside local Outside global
icmp 210.185.200.243:25172.168.1.21:25 172.31.7.1:25 172.31.7.1:25
icmp 210.185.200.243:26172.168.1.21:26 172.31.7.1:26 172.31.7.1:26
icmp 210.185.200.243:27172.168.1.21:27 172.31.7.1:27 172.31.7.1:27
icmp 210.185.200.243:28172.168.1.21:28 172.31.7.1:28 172.31.7.1:28
Gateway#ip nat statistics
^
% Invalid input detected at '^' marker.
Gateway#show ip nat statistics
Total translations: 0 (0 static, 0 dynamic, 0 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 121 Misses: 60
Expired translations: 51
Dynamic mappings:
-- Inside Source
access-list 1 pool public_access refCount 0
pool public_access: netmask 255.255.255.224
start 210.185.200.242 end 210.185.200.254
type generic, total addresses 13 , allocated 0 (0%), misses 0
Gateway#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

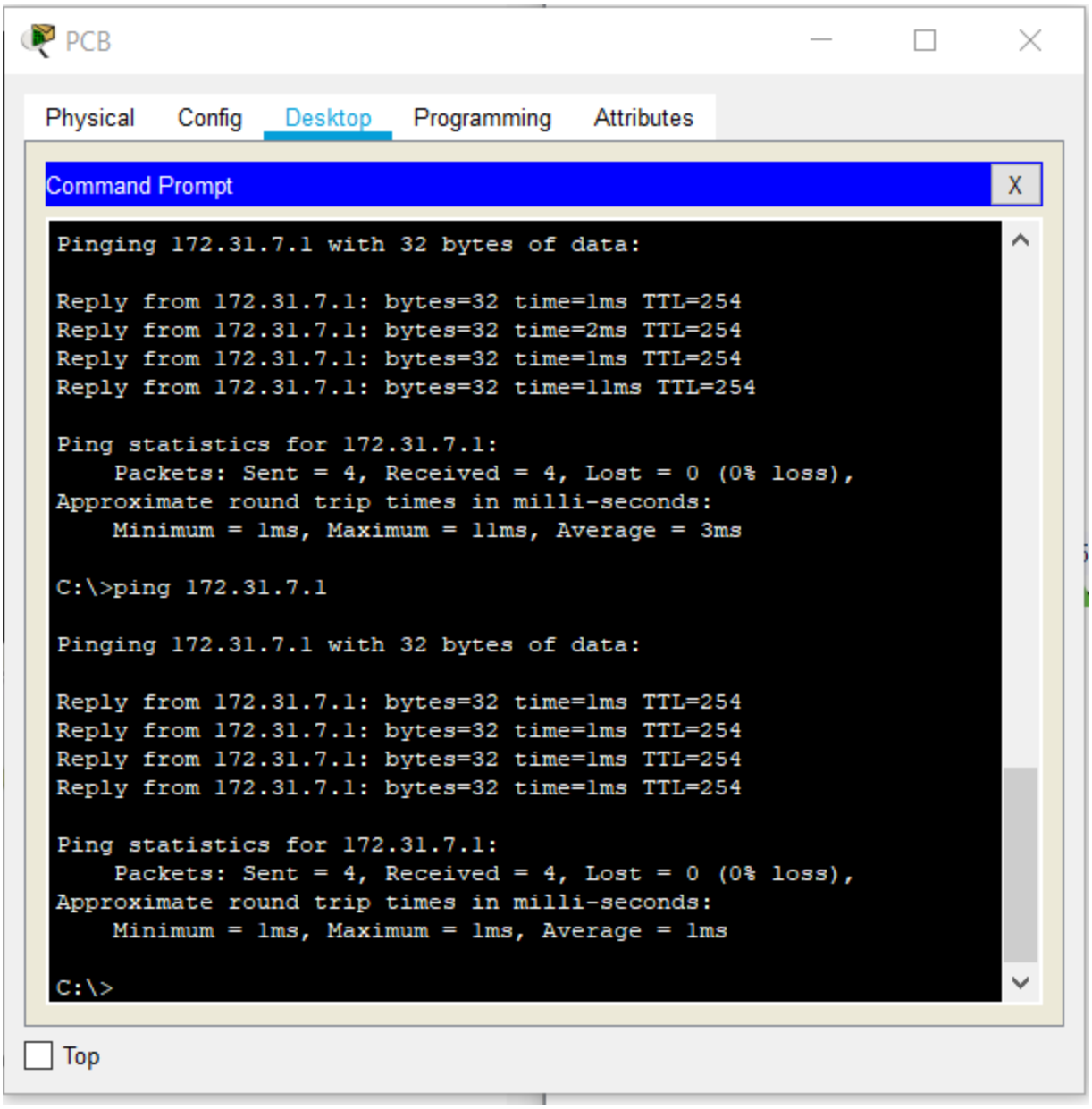
Step 7a-7b:


Gateway
Physical
Config
CLI
Attributes
IOS Command Line Interface
ip nat outside
!
interface Vlan1
no ip address
shutdown
!
ip nat pool public_access 210.185.200.242 210.185.200.254 netmask 255.255.255.224
ip nat inside source list 1 pool public_access
ip nat inside source static 172.168.1.20 209.165.200.22
ip classless
ip route 0.0.0.0 0.0.0.0 210.185.201.17
!
ip flow-export version 9
!
!
access-list 1 permit 192.168.1.0 0.0.0.255
access-list 1 permit 0.0.0.21 255.255.255.0
access-list 1 permit 172.168.1.0 0.0.0.255
!
Gateway#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Gateway(config)#ip nat inside source static 172.168.1.20 209.165.200.22
Gateway(config)#no ip nat inside source static 172.168.1.20 209.165.200.22
Gateway(config)#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

Step 7c:

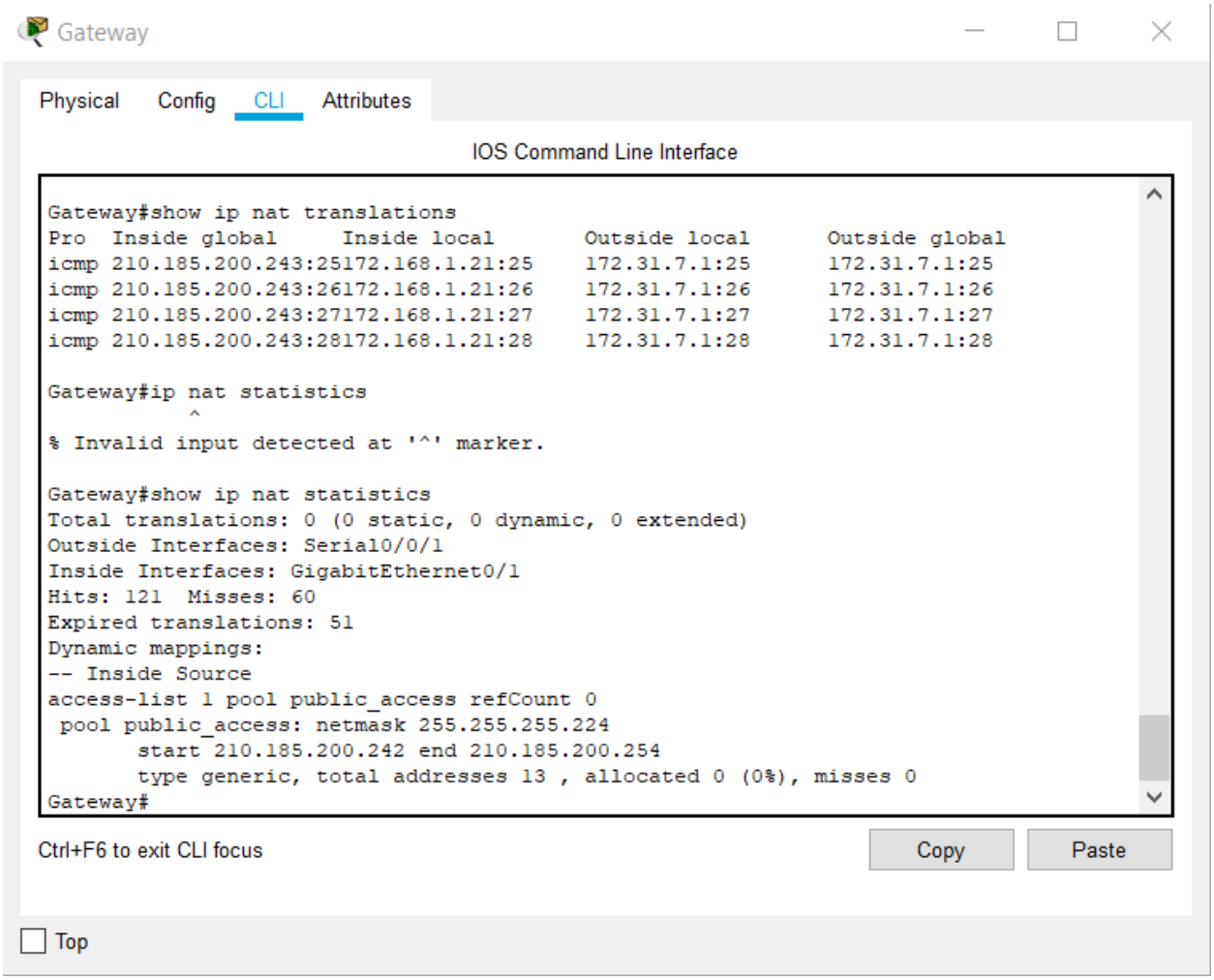


Ping ISP from PC-A



Ping ISP from PC-B

Step 7d:



Nat table and the statistics.