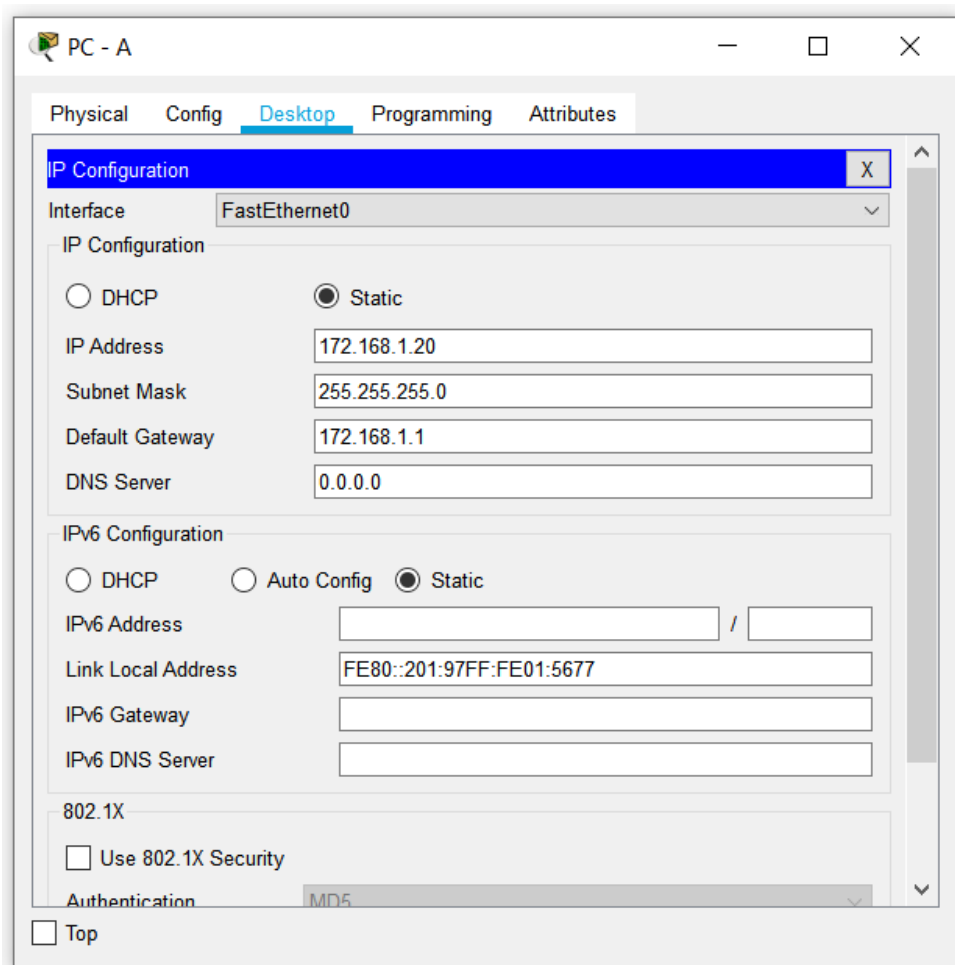
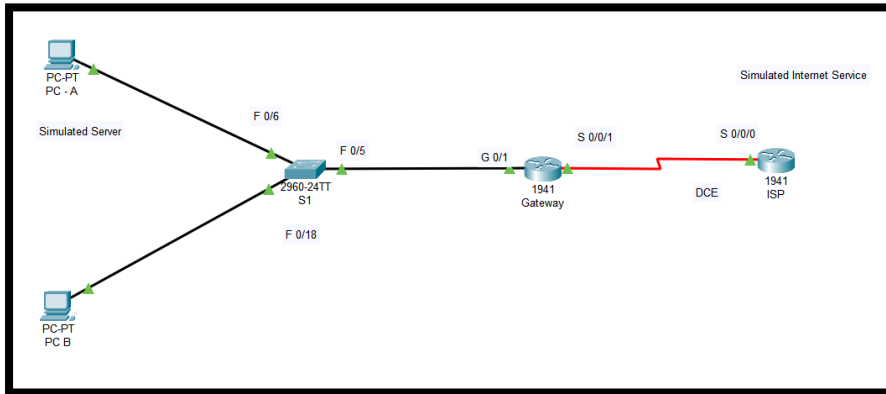


Vishal Salvi. 2019230069

Shreyas Patel. 2018130037

Shivam Pawar. 2019230068

Tasl 1:



PC B

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IP Address 172.168.1.21

Subnet Mask 255.255.255.0

Default Gateway 172.168.1.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::2E0:F9FF:FED9:6E07

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

☐ Top



ISP



Physical

Config

CLI

Attributes

IOS Command Line Interface

Press RETURN to get started!

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#no ip domain-lookup
Router(config)#service password-encryption
Router(config)#enable secret class
Router(config)#banner motd #
Enter TEXT message.  End with the character '#'.
Unauthorized access is strictly prohibited. #

Router(config)#line con 0
Router(config-line)#password cisco
Router(config-line)#login
Router(config-line)#logging synchronous
Router(config-line)#line vty 0 4
Router(config-line)#password cisco
Router(config-line)#login
Router(config-line)#
```

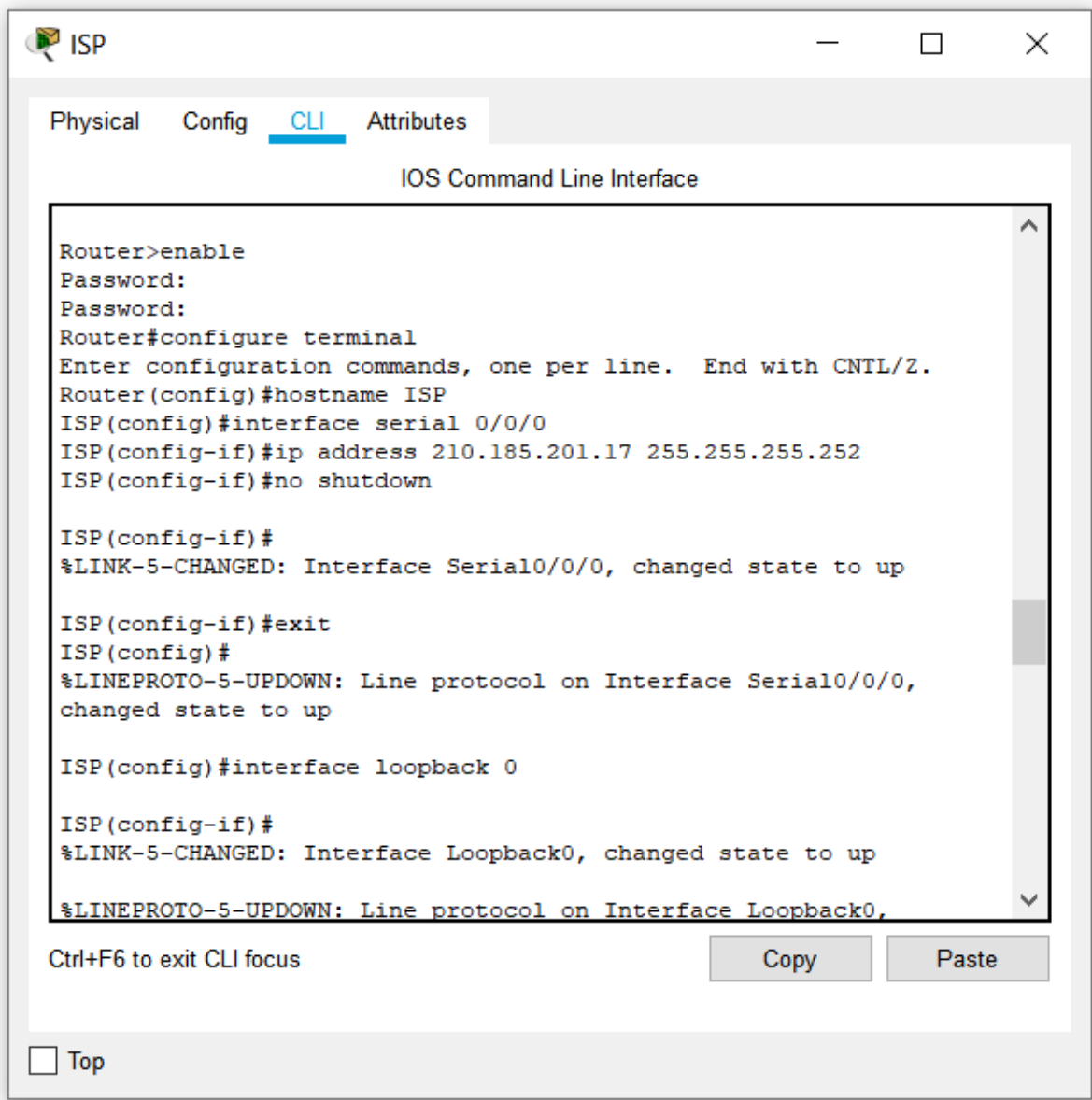
Ctrl+F6 to exit CLI focus

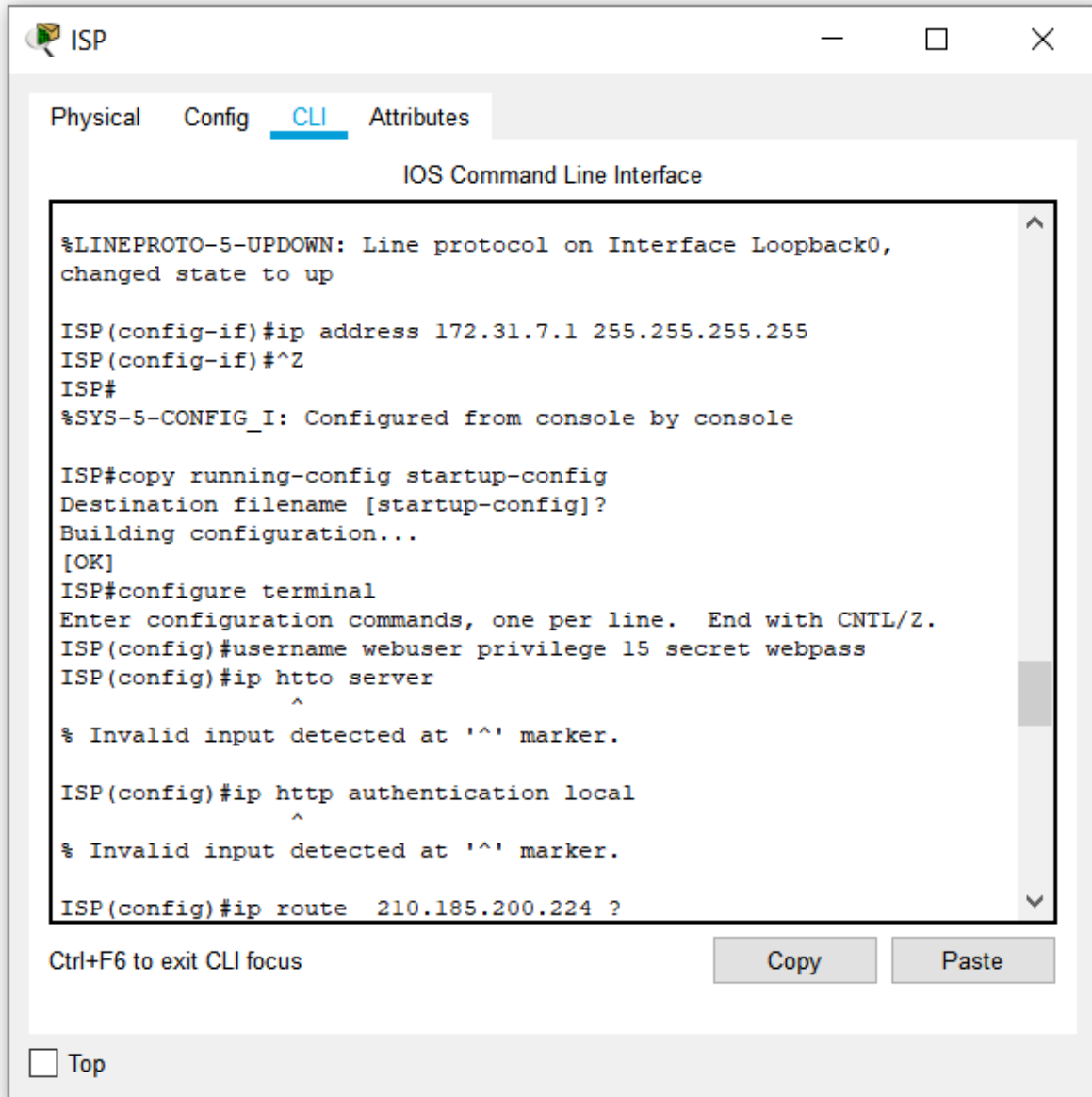
Copy

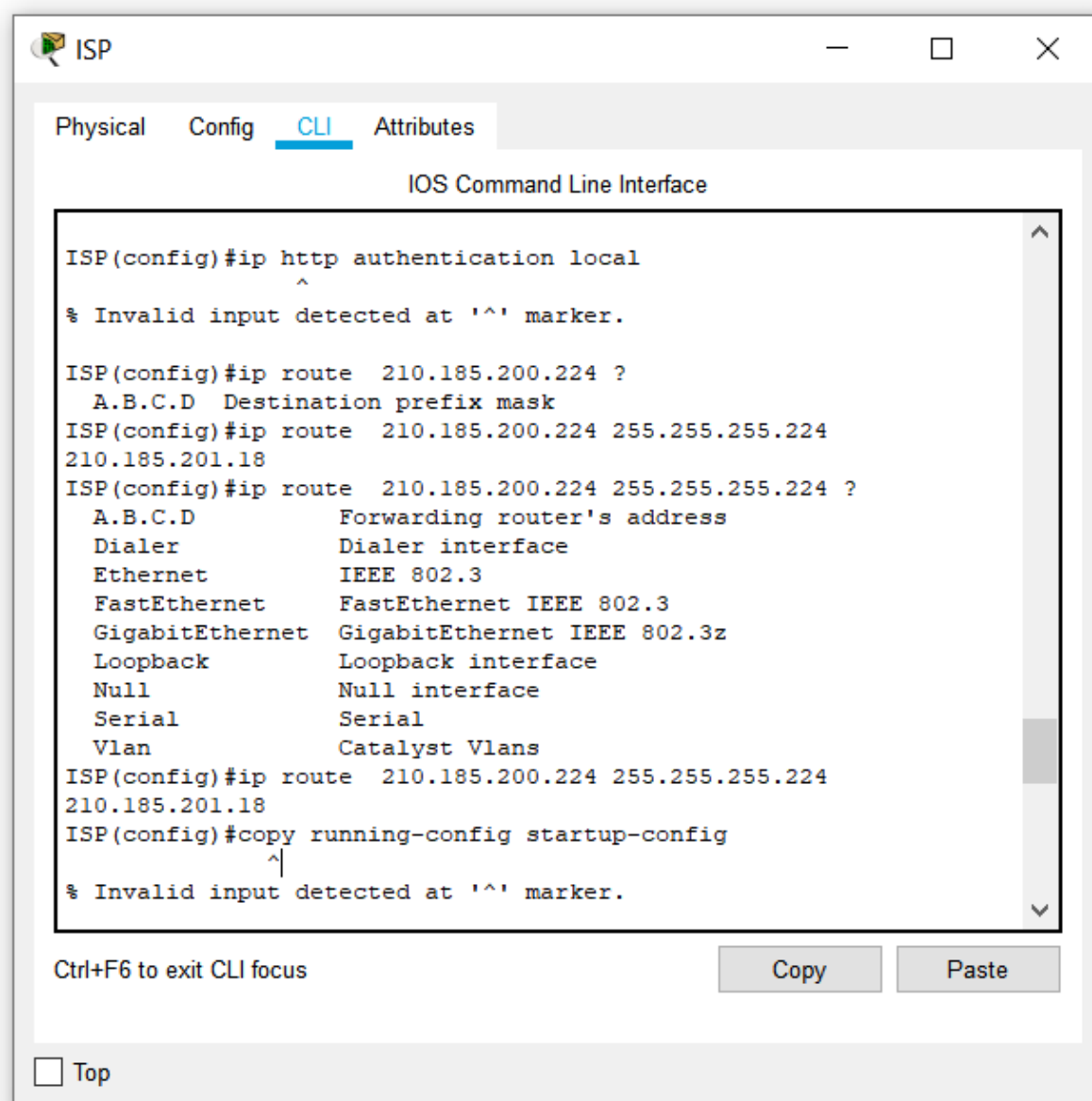
Paste

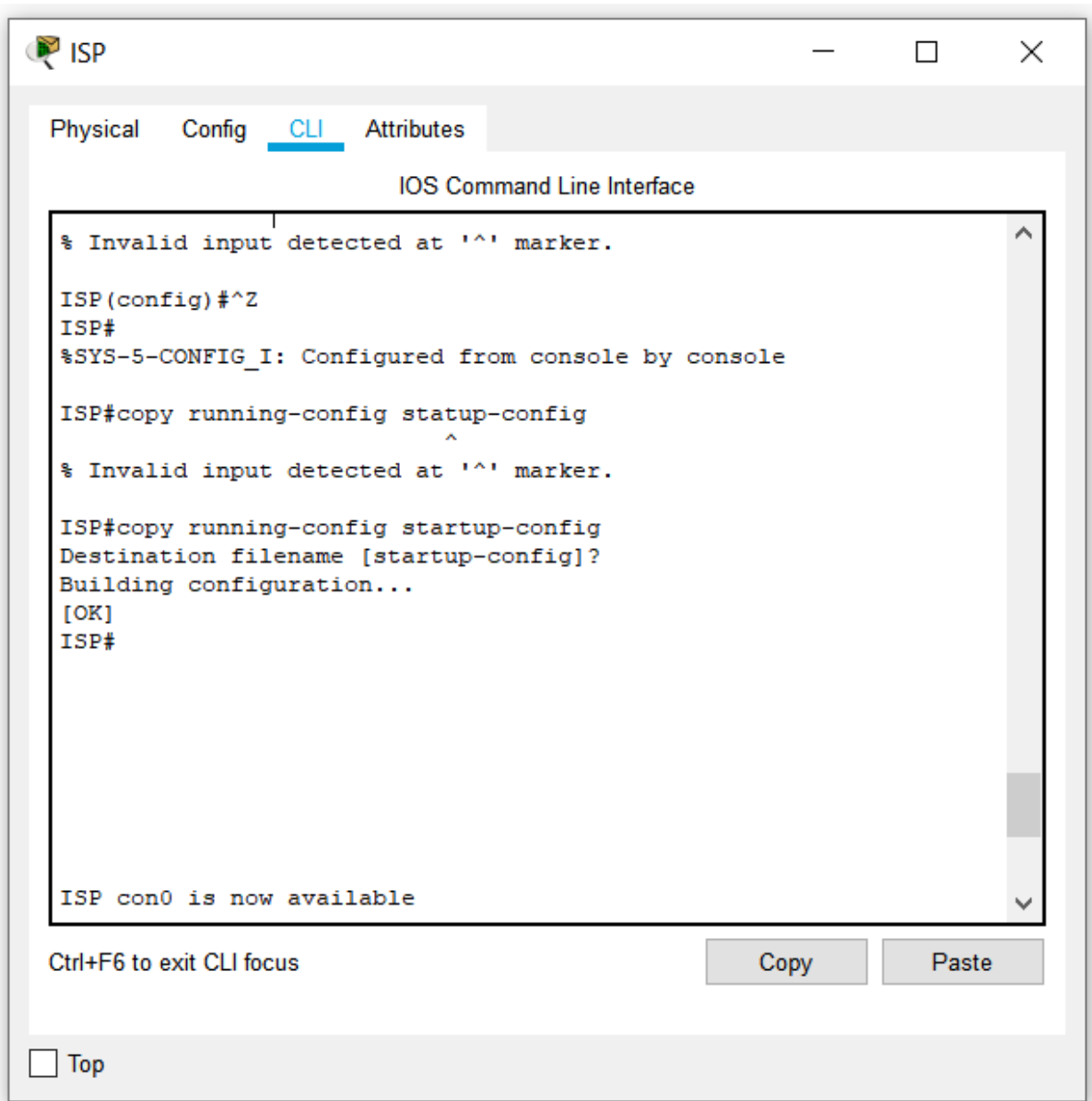


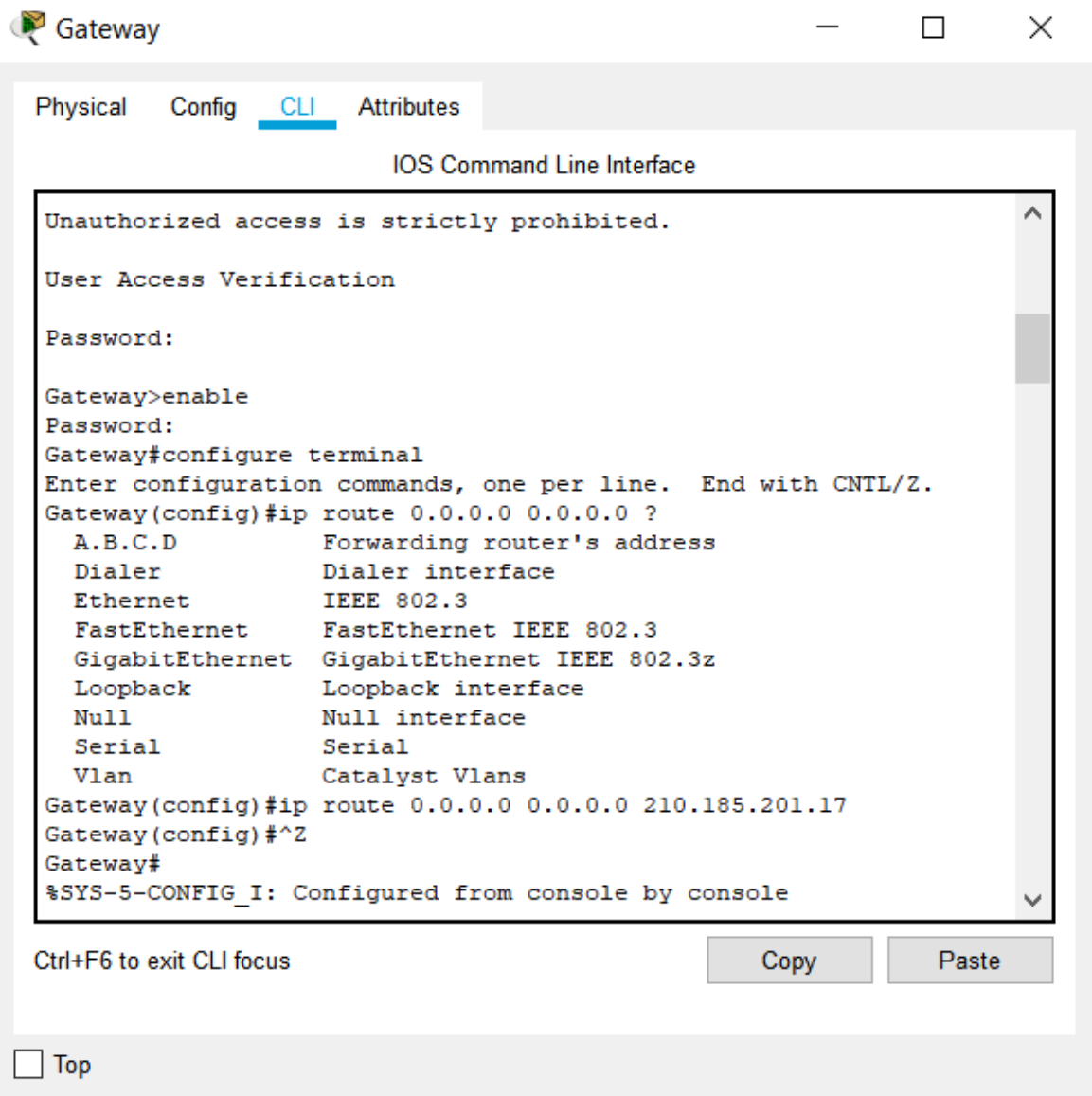
Top

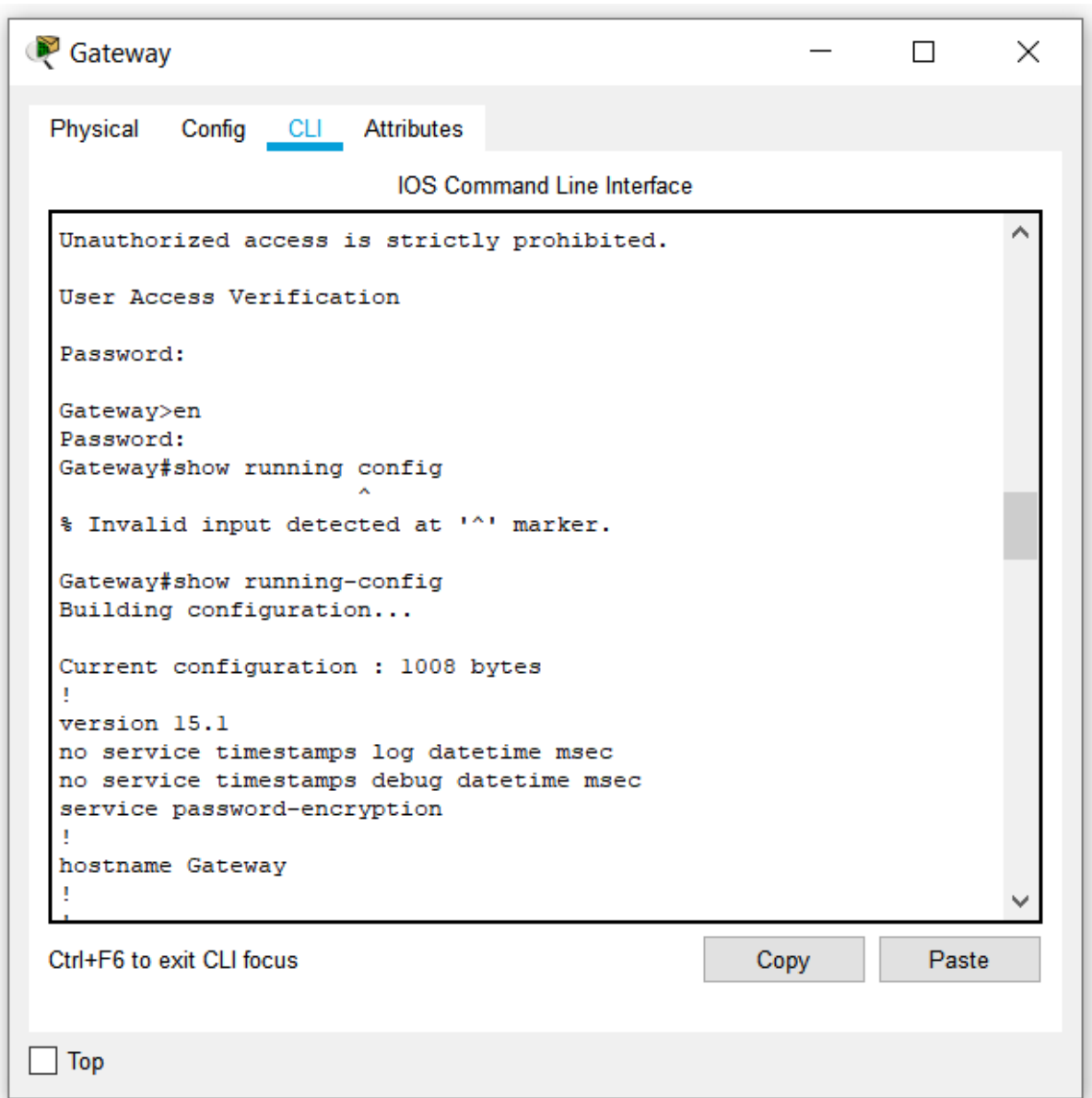


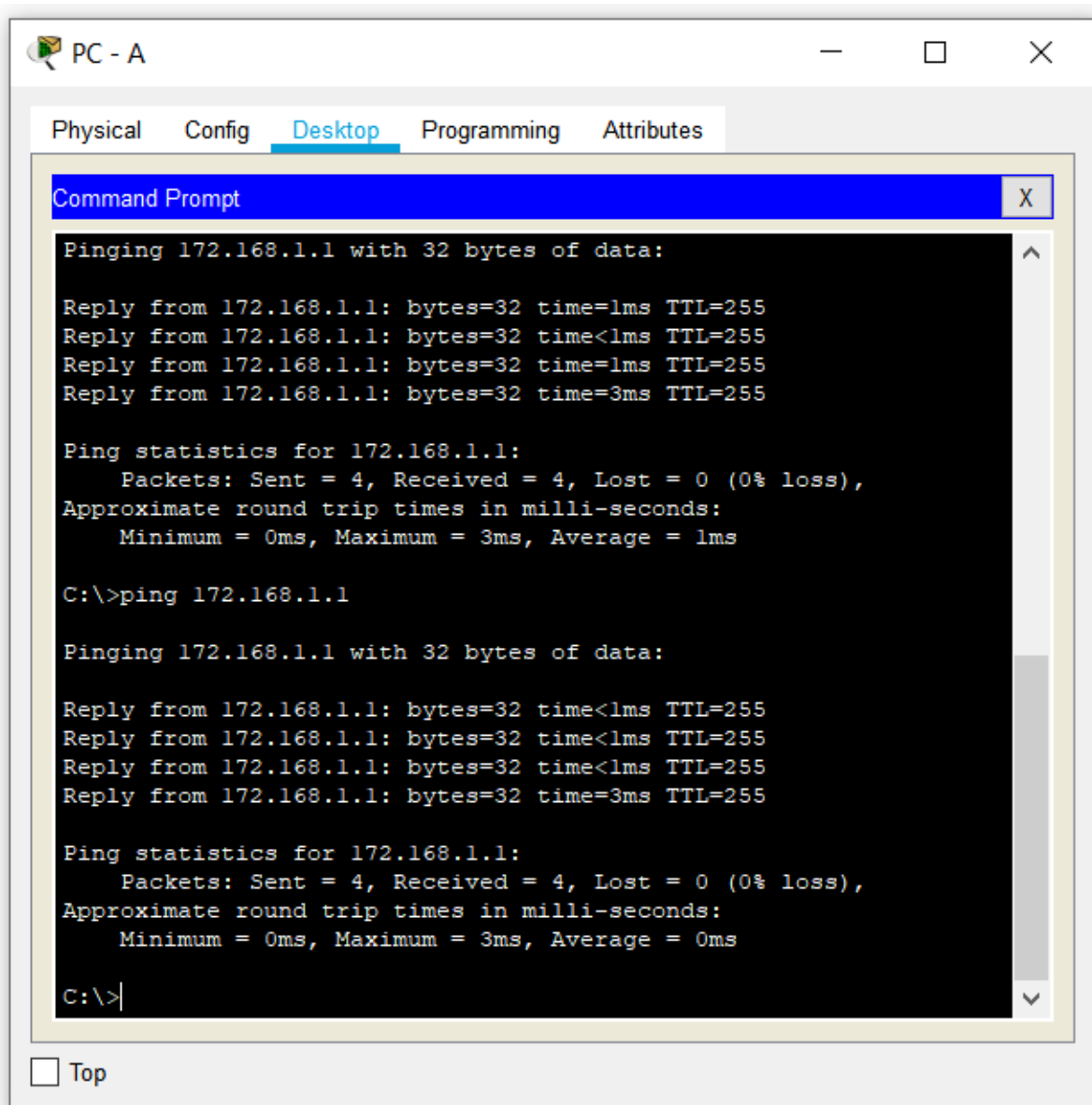














PC B



Physical

Config

Desktop

Programming

Attributes

Command Prompt



Pinging 172.168.1.1 with 32 bytes of data:

Reply from 172.168.1.1: bytes=32 time<1ms TTL=255

Reply from 172.168.1.1: bytes=32 time<1ms TTL=255

Reply from 172.168.1.1: bytes=32 time<1ms TTL=255

Reply from 172.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.168.1.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 172.168.1.1

Pinging 172.168.1.1 with 32 bytes of data:

Reply from 172.168.1.1: bytes=32 time<1ms TTL=255

Reply from 172.168.1.1: bytes=32 time<1ms TTL=255

Reply from 172.168.1.1: bytes=32 time<1ms TTL=255

Reply from 172.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.168.1.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>



Top



Gateway



Physical

Config

CLI

Attributes

IOS Command Line Interface

Gateway#show ip route

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP

D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area

N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2

E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP

i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area

* - candidate default, U - per-user static route, o - ODR

P - periodic downloaded static route

Gateway of last resort is 210.185.201.17 to network 0.0.0.0

172.168.0.0/16 is variably subnetted, 2 subnets, 2 masks

C 172.168.1.0/24 is directly connected, GigabitEthernet0/1

L 172.168.1.1/32 is directly connected, GigabitEthernet0/1

210.185.201.0/24 is variably subnetted, 2 subnets, 2 masks

C 210.185.201.16/30 is directly connected, Serial0/0/1

L 210.185.201.18/32 is directly connected, Serial0/0/1

S* 0.0.0.0/0 [1/0] via 210.185.201.17

Gateway#

Ctrl+F6 to exit CLI focus

Copy

Paste



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ISP



Physical

Config

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IOS Command Line Interface

```
ISP#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile,
B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter
area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external
type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E -
EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia -
IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

    172.31.0.0/32 is subnetted, 1 subnets
C      172.31.7.1/32 is directly connected, Loopback0
    210.185.200.0/27 is subnetted, 1 subnets
S      210.185.200.224/27 [1/0] via 210.185.201.18
    210.185.201.0/24 is variably subnetted, 2 subnets, 2 masks
C      210.185.201.16/30 is directly connected, Serial0/0/0
L      210.185.201.17/32 is directly connected, Serial0/0/0

ISP#
```

Ctrl+F6 to exit CLI focus

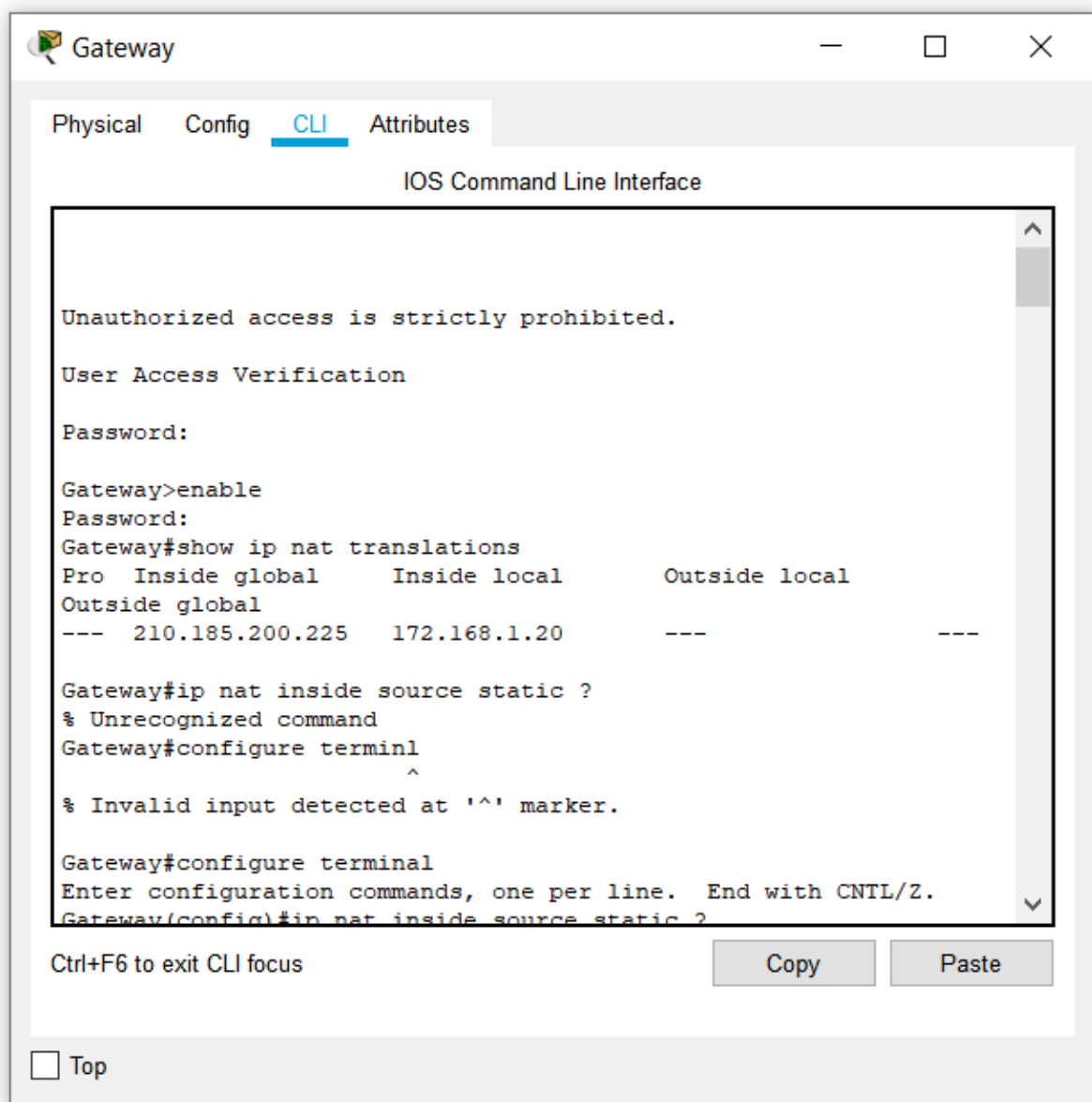
Copy

Paste



Top

Task 2:





Gateway



Physical

Config

CLI

Attributes

IOS Command Line Interface

```
Gateway#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Gateway(config)#ip nat inside source static ?
  A.B.C.D   Inside local IP address
  tcp      Transmission Control Protocol
  udp      User Datagram Protocol
Gateway(config)#ip nat inside source static 172.168.1.20 ?
  A.B.C.D   Inside global IP address
Gateway(config)#ip nat inside source static 172.168.1.20
210.185.200.225
Gateway(config)#interface gigabitEthernet 0/1
Gateway(config-if)#ip nat inside
Gateway(config-if)#exit
Gateway(config)#interface serial 0/0/1
Gateway(config-if)#ip nat outside
Gateway(config-if)#^Z
Gateway#
%SYS-5-CONFIG_I: Configured from console by console

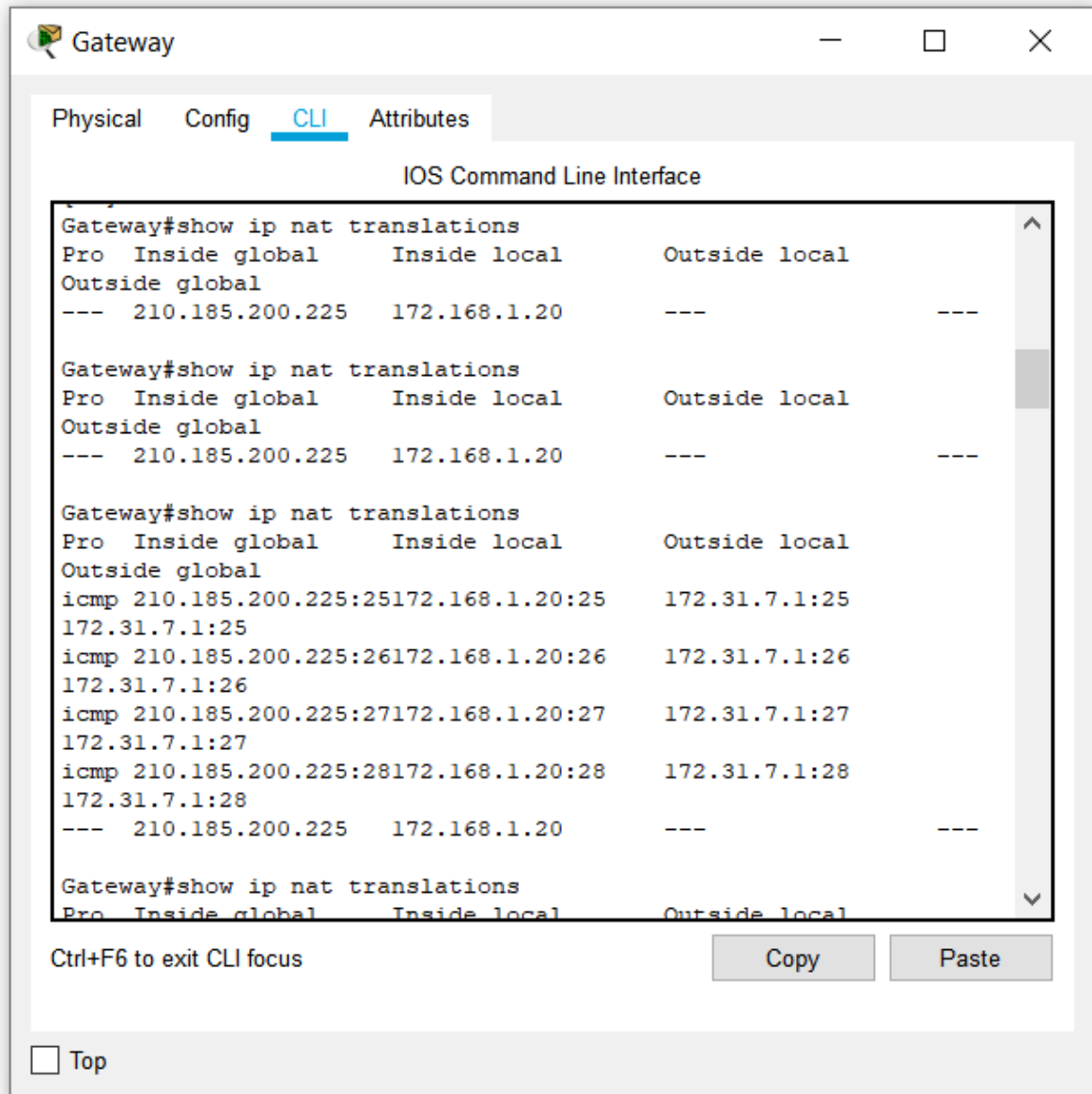
Gateway#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
Gateway#show ip nat translations
```

Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top



What is the translation of the Inside local host address?

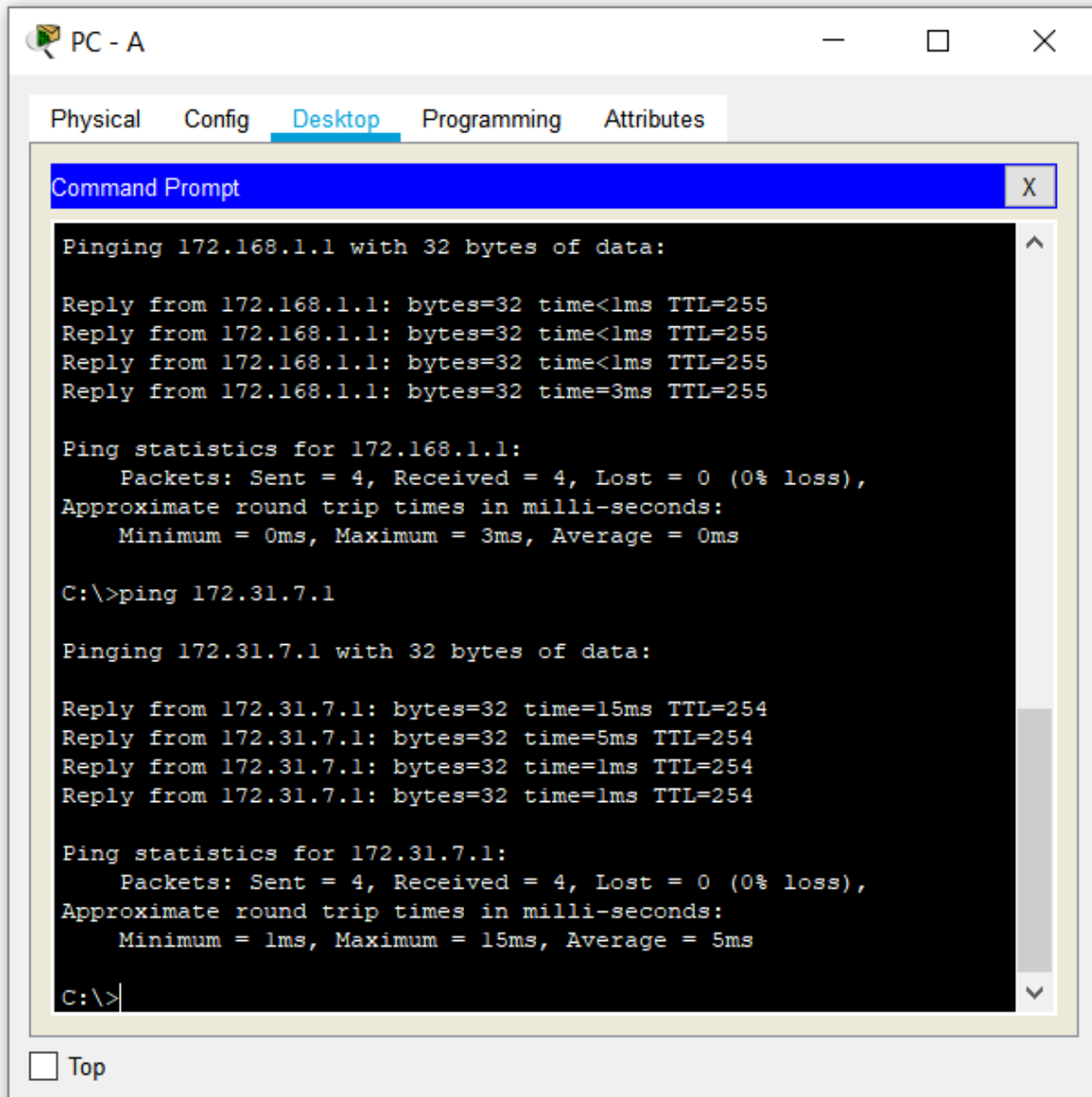
172.168.1.20 = 210.185.200.225

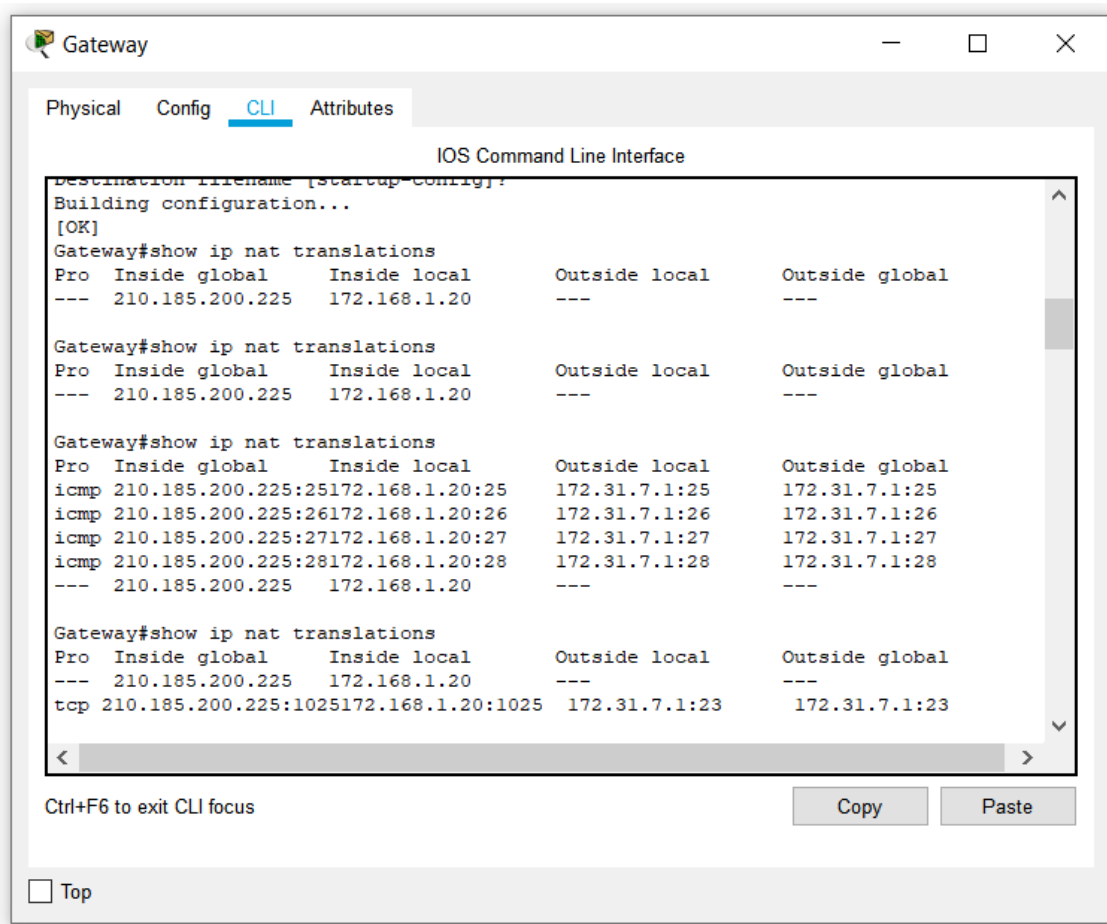
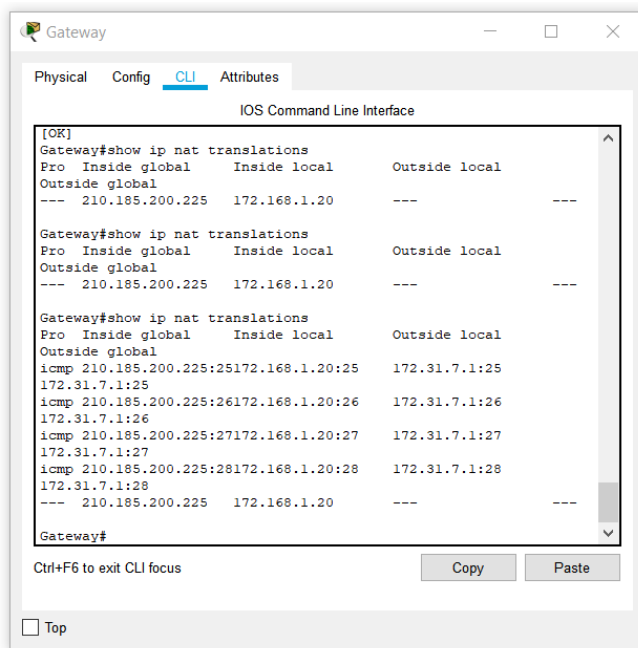
The Inside global address is assigned by?

ISP(Static) NAT Pool (Dynamic)

The Inside local address is assigned by?

System Administrator

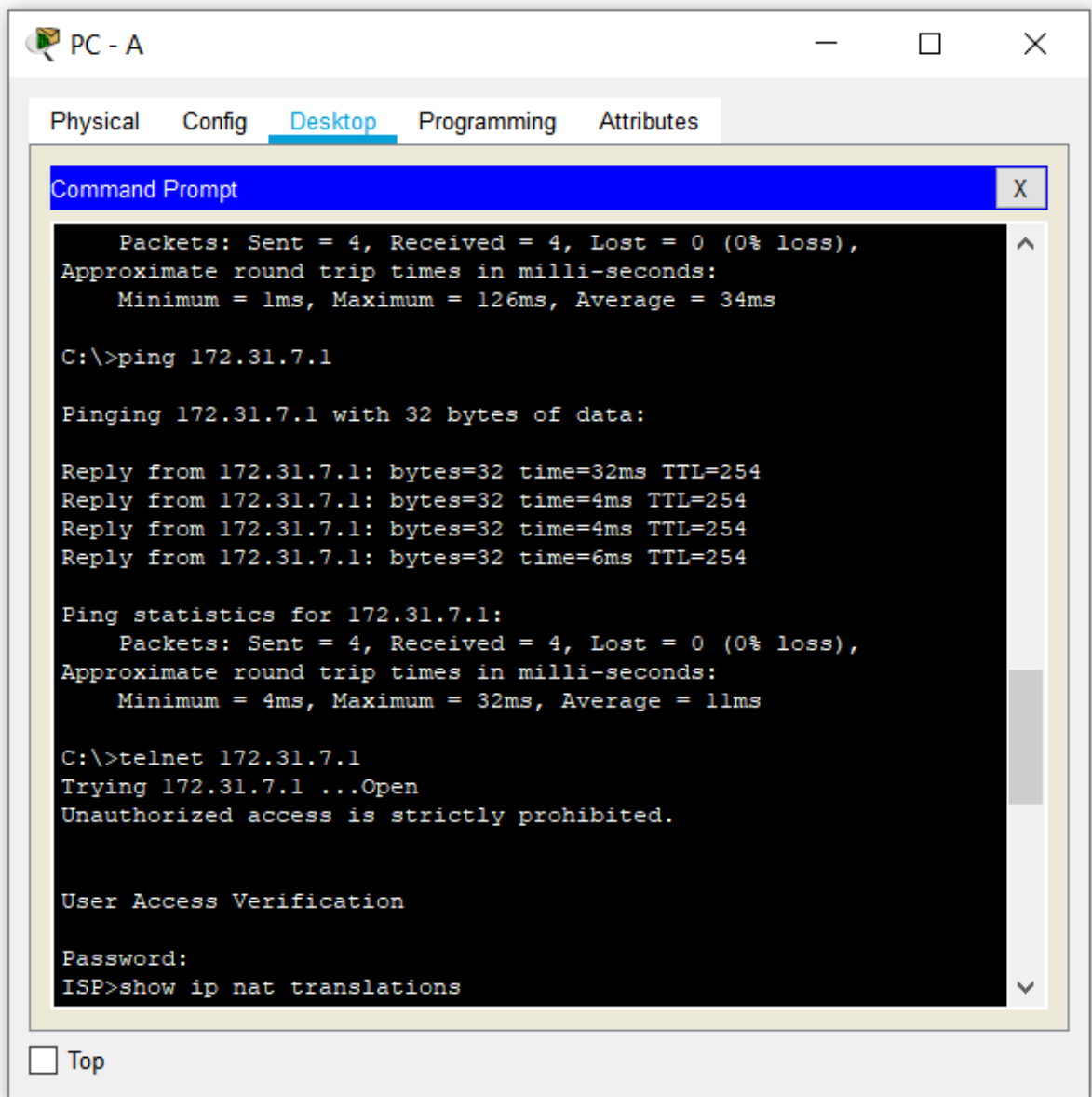


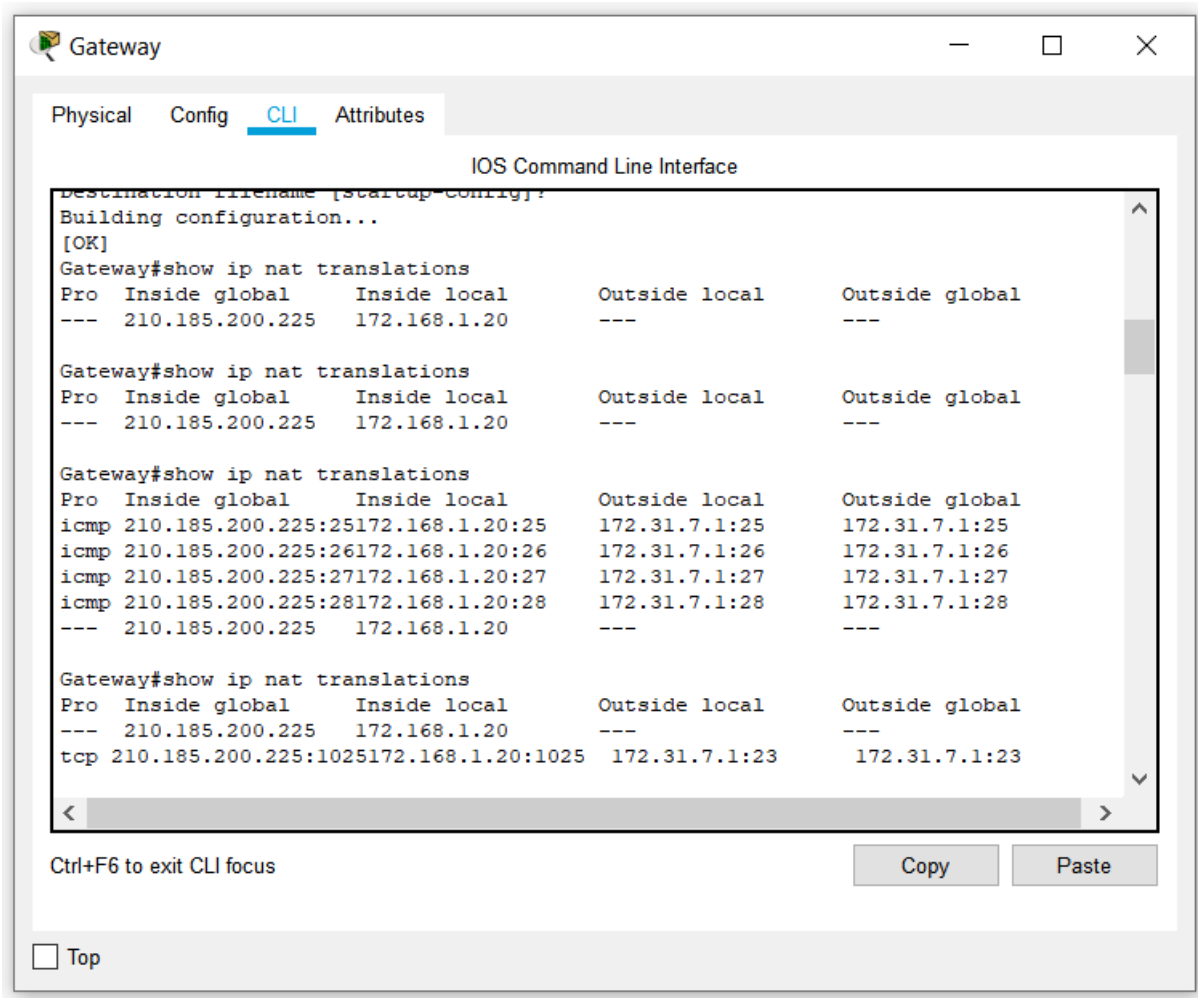


What port number was used in this ICMP exchange?

4 port numbers were used for 4 ICMP exchanges for 4 pings.

They are 25 26 27 28





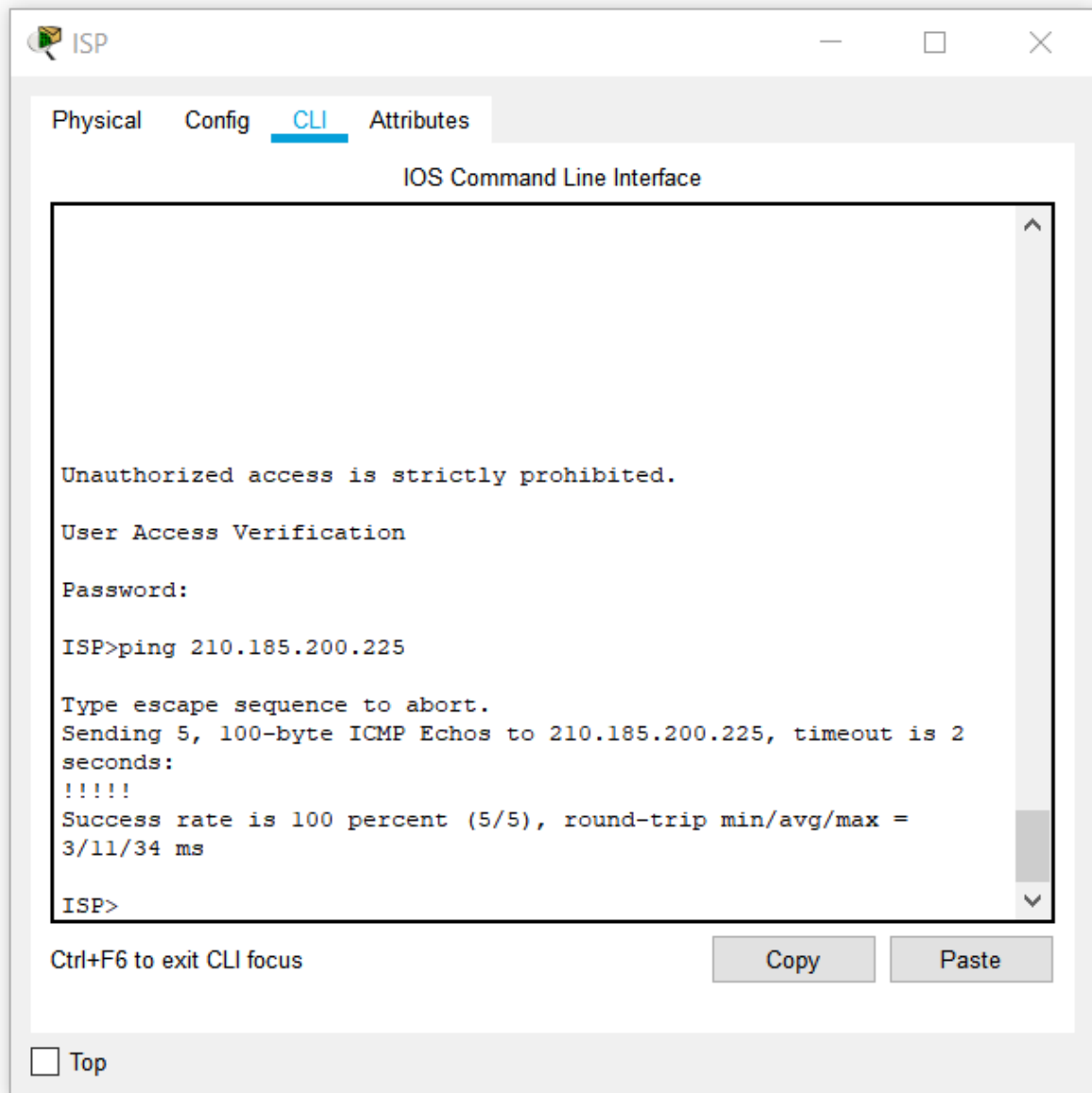
What was the protocol used in this translation?

TCP

What are the port numbers used?

Inside global / local: 1025

Outside global / local: 23





Gateway



Physical

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CLI

Attributes

IOS Command Line Interface

Gateway#show ip nat translations

Pro	Inside global	Inside local	Outside local	Outside global
---	210.185.200.225	172.168.1.20	---	---
tcp	210.185.200.225:1025	172.168.1.20:1025	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
---	210.185.200.225	172.168.1.20	---	---
tcp	210.185.200.225:1025	172.168.1.20:1025	172.31.7.1:23	

Gateway#

Ctrl+F6 to exit CLI focus

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Gateway

PhysicalConfigCLIAttributes

IOS Command Line Interface

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
---	210.185.200.225	172.168.1.20	---	---
tcp	210.185.200.225:1025	172.168.1.20:1025	172.31.7.1:23	172.31.7.1:23

Gateway#show ip nat statistics

Total translations: 2 (1 static, 1 dynamic, 1 extended)

Outside Interfaces: Serial0/0/1

Inside Interfaces: GigabitEthernet0/1

Hits: 131 Misses: 18

Expired translations: 17

Dynamic mappings:

Gateway#clear ip nat translation *

Gateway#clear ip nat statistics

^

% Invalid input detected at '^' marker.

Ctrl+F6 to exit CLI focus

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Task 3:

Gateway

Physical Config **CLI** Attributes

IOS Command Line Interface

```
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
--- 210.185.200.225 172.168.1.20 ---
tcp 210.185.200.225:1025 172.168.1.20:1025 172.31.7.1:23
172.31.7.1:23

Gateway#show ip nat statistics
Total translations: 2 (1 static, 1 dynamic, 1 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 131 Misses: 18
Expired translations: 17
Dynamic mappings:
Gateway#clear ip nat translation *
Gateway#clear ip nat statistics
^
% Invalid input detected at '^' marker.

Gateway#
```

Ctrl+F6 to exit CLI focus

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Gateway



Physical

Config

CLI

Attributes

IOS Command Line Interface

```
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
--- 210.185.200.225 172.168.1.20 ---
tcp 210.185.200.225:1025 172.168.1.20:1025 172.31.7.1:23
172.31.7.1:23

Gateway#show ip nat statistics
Total translations: 2 (1 static, 1 dynamic, 1 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 131 Misses: 18
Expired translations: 17
Dynamic mappings:
Gateway#clear ip nat translation *
Gateway#clear ip nat statistics
      ^
% Invalid input detected at '^' marker.


Gateway#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Gateway(config)#access-list 1 permit 172.168.1.0 0.0.0.255
Gateway(config)#
```

Ctrl+F6 to exit CLI focus

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 Gateway

Physical Config CLI Attributes

IOS Command Line Interface

```
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 131 Misses: 18
Expired translations: 17
Dynamic mappings:
Gateway#clear ip nat translation *
Gateway#clear ip nat statistics
^
% Invalid input detected at '^' marker.

Gateway#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Gateway(config)#access-list 1 permit 172.168.1.0 0.0.0.255
Gateway(config)#^Z
Gateway#
%SYS-5-CONFIG_I: Configured from console by console

Gateway#show ip nat statistics
Total translations: 1 (1 static, 0 dynamic, 0 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 131 Misses: 18
Expired translations: 17
Dynamic mappings:
Gateway#
```

Ctrl+F6 to exit CLI focus

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Gateway

PhysicalConfigCLIAttributes

IOS Command Line Interface

```
Gateway(config)#access-list 1 permit 172.168.1.0 0.0.0.255
Gateway(config)#^Z
Gateway#
%SYS-5-CONFIG_I: Configured from console by console

Gateway#show ip nat statistics
Total translations: 1 (1 static, 0 dynamic, 0 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 131 Misses: 18
Expired translations: 17
Dynamic mappings:
Gateway#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Gateway(config)#ip nat pool public_access 210.185.200.242
% Incomplete command.
Gateway(config)#ip nat pool public_access 210.185.200.242
210.185.200.254 netmask 255.255.224

^
% Invalid input detected at '^' marker.

Gateway(config)#ip nat pool public_access 210.185.200.242
210.185.200.254 netmask 255.255.255.224
Gateway(config)#
```

Ctrl+F6 to exit CLI focusCopyPaste

☐ Top



Gateway



Physical

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IOS Command Line Interface

```
Gateway(config)#^Z
Gateway#
%SYS-5-CONFIG_I: Configured from console by console

Gateway#show ip nat statistics
Total translations: 1 (1 static, 0 dynamic, 0 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 131 Misses: 18
Expired translations: 17
Dynamic mappings:
Gateway#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Gateway(config)#ip nat pool public_access 210.185.200.242
% Incomplete command.
Gateway(config)#ip nat pool public_access 210.185.200.242
210.185.200.254 netmask 255.255.224
^
% Invalid input detected at '^' marker.

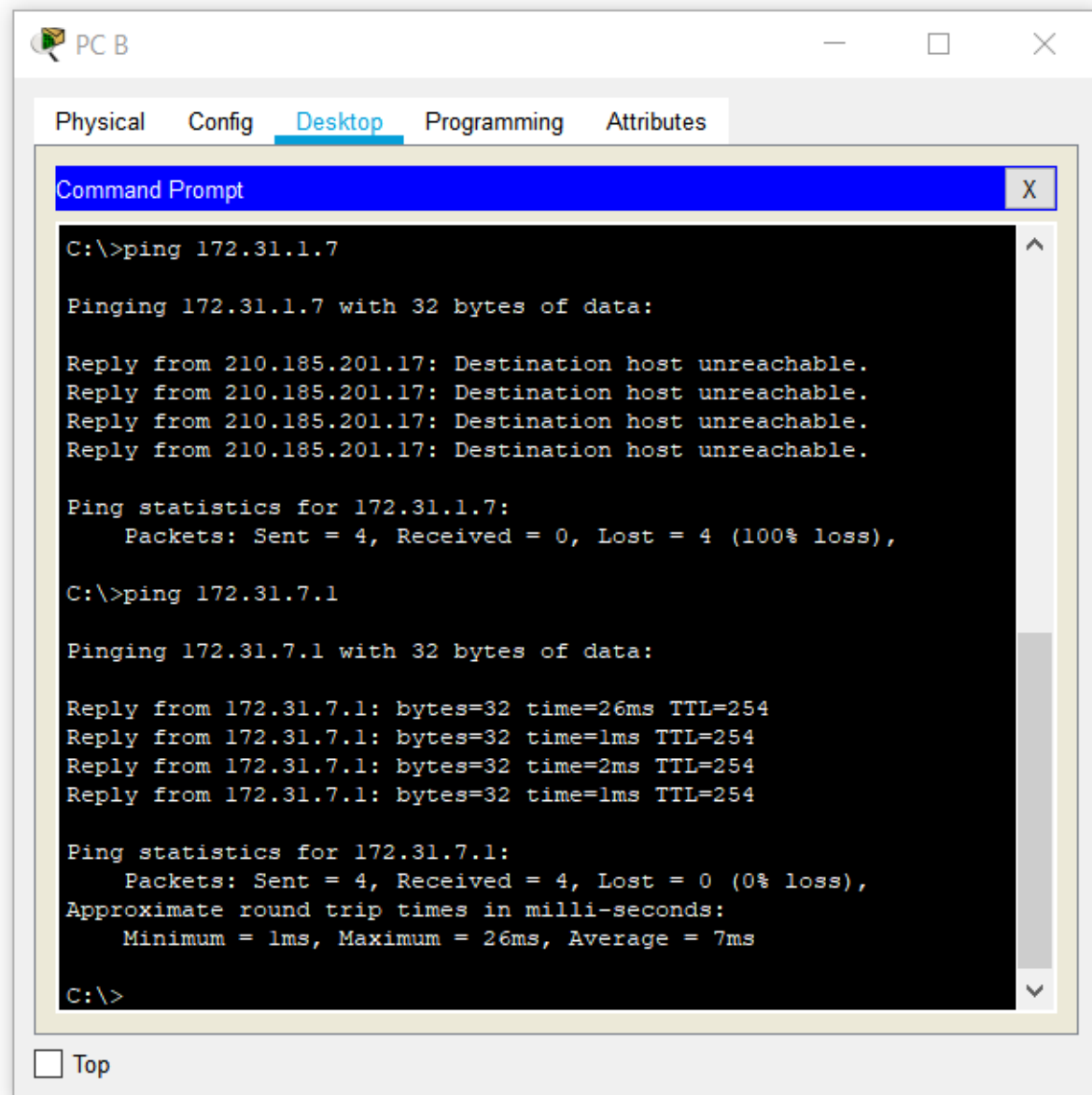
Gateway(config)#ip nat pool public_access 210.185.200.242
210.185.200.254 netmask 255.255.255.224
Gateway(config)#ip nat inside source list 1 pool public_access
Gateway(config)#
```

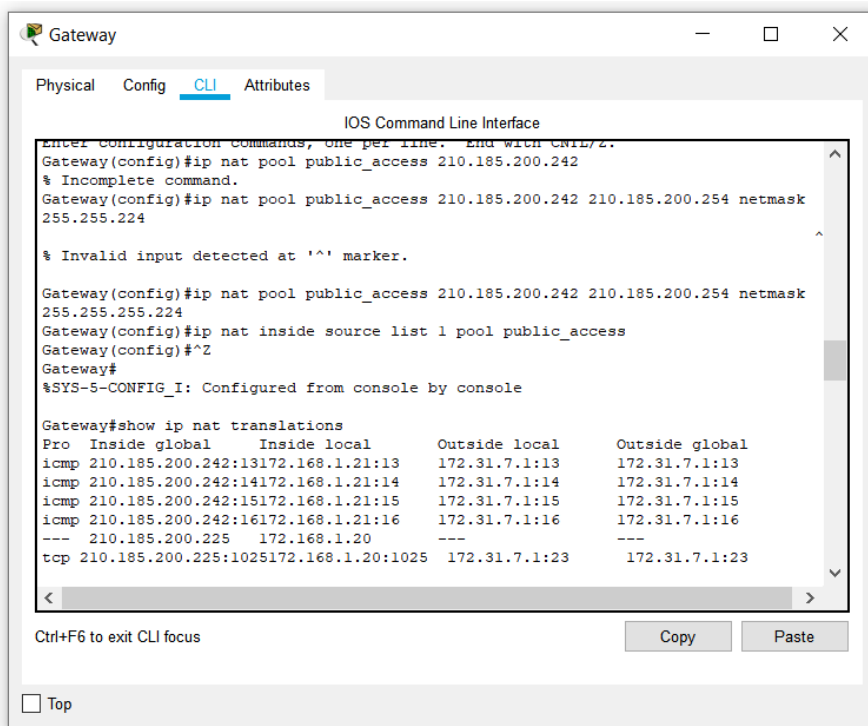
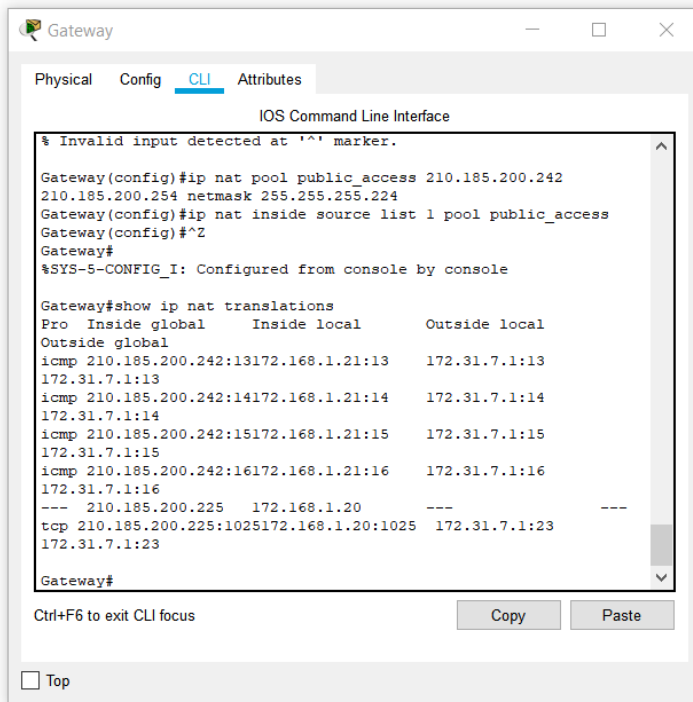
Ctrl+F6 to exit CLI focus

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☐ Top





What is the translation of the Inside local host address for PC-B? 192.168.1.21 =
 210.183.200.225

What port number was used in this ICMP exchange?

4 port numbers were used for 4 ICMP exchanges for 4 pings.

They are 13, 14, 15, 16.



Gateway



Physical

Config

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IOS Command Line Interface

```
Gateway#show ip nat translations
Pro  Inside global      Inside local      Outside local
Outside global
icmp 210.185.200.242:13 172.168.1.21:13   172.31.7.1:13
172.31.7.1:13
icmp 210.185.200.242:14 172.168.1.21:14   172.31.7.1:14
172.31.7.1:14
icmp 210.185.200.242:15 172.168.1.21:15   172.31.7.1:15
172.31.7.1:15
icmp 210.185.200.242:16 172.168.1.21:16   172.31.7.1:16
172.31.7.1:16
--- 210.185.200.225    172.168.1.20      ---
tcp 210.185.200.225:1025 172.168.1.20:1025 172.31.7.1:23
172.31.7.1:23

Gateway#no ip nat inside source static 172.168.1.20
210.185.200.225
      ^
% Invalid input detected at '^' marker.

Gateway#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Gateway(config)#no ip nat inside source static 172.168.1.20
210.185.200.225
Gateway(config)#
```

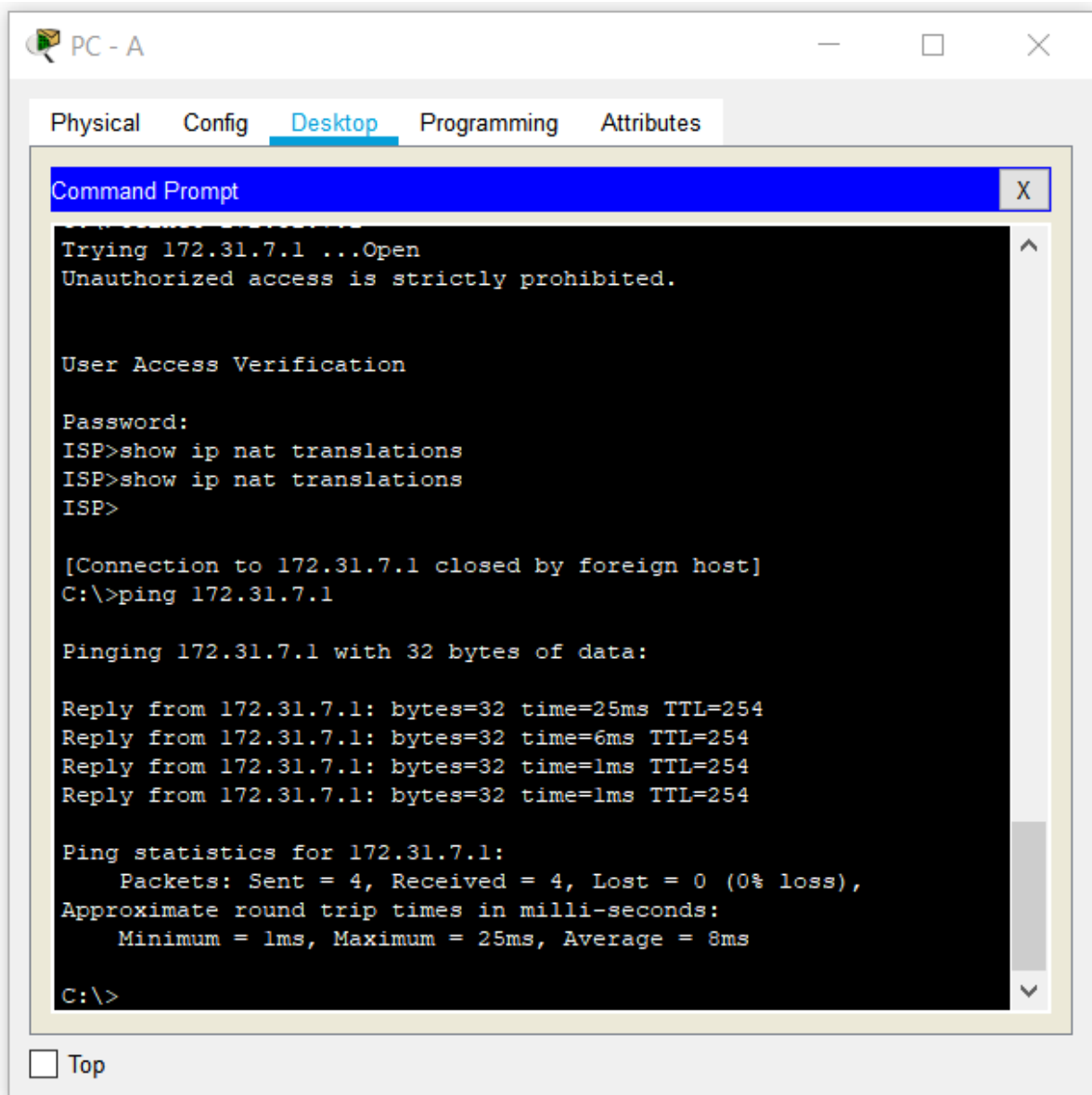
Ctrl+F6 to exit CLI focus

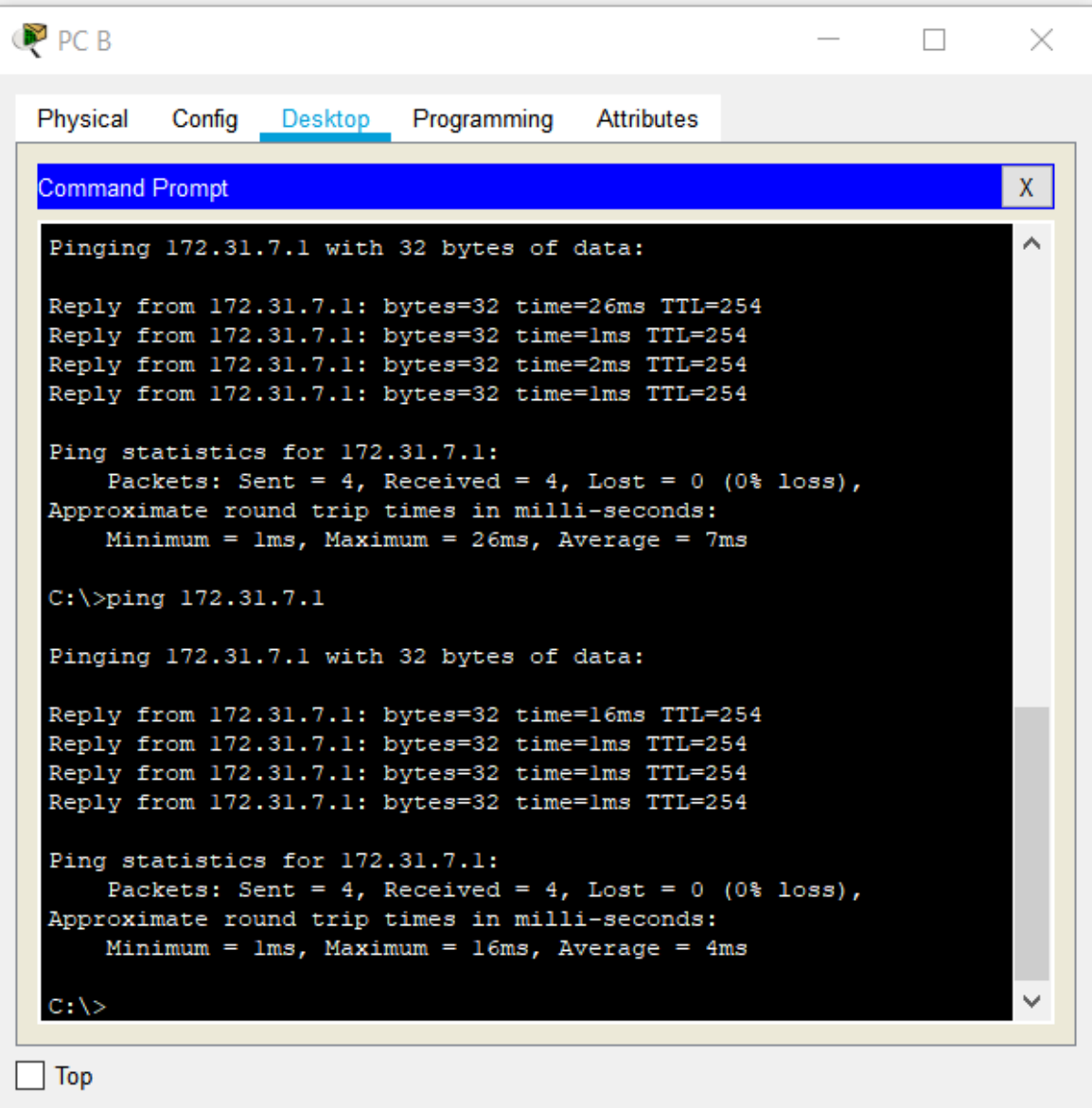
Copy

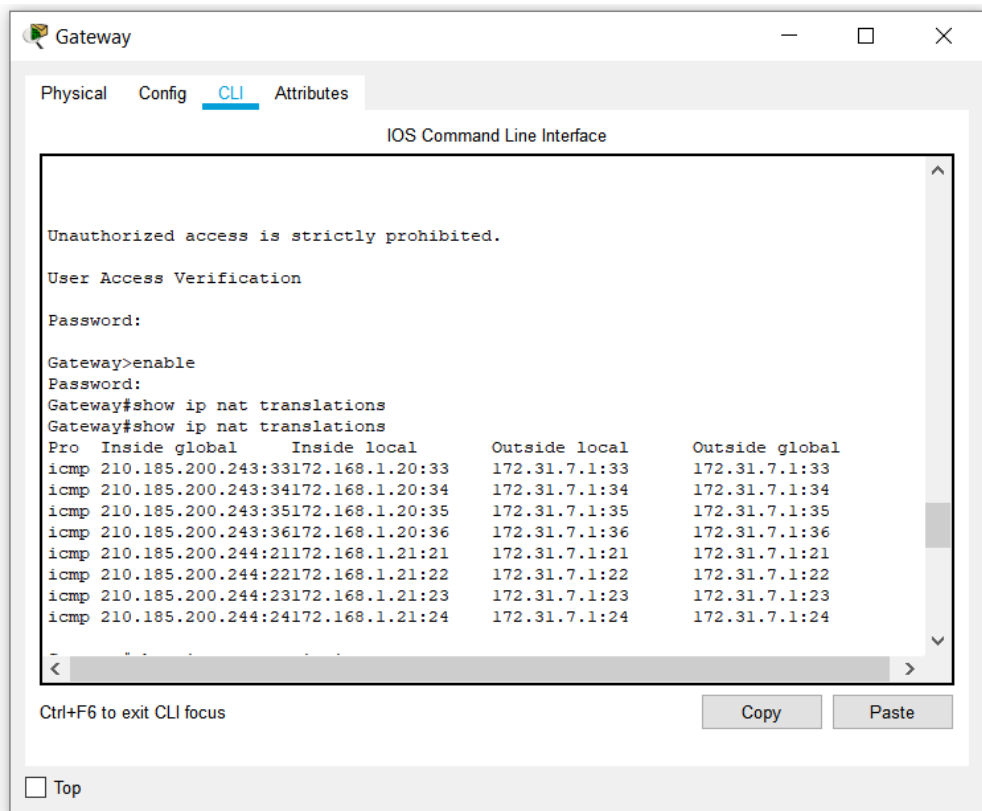
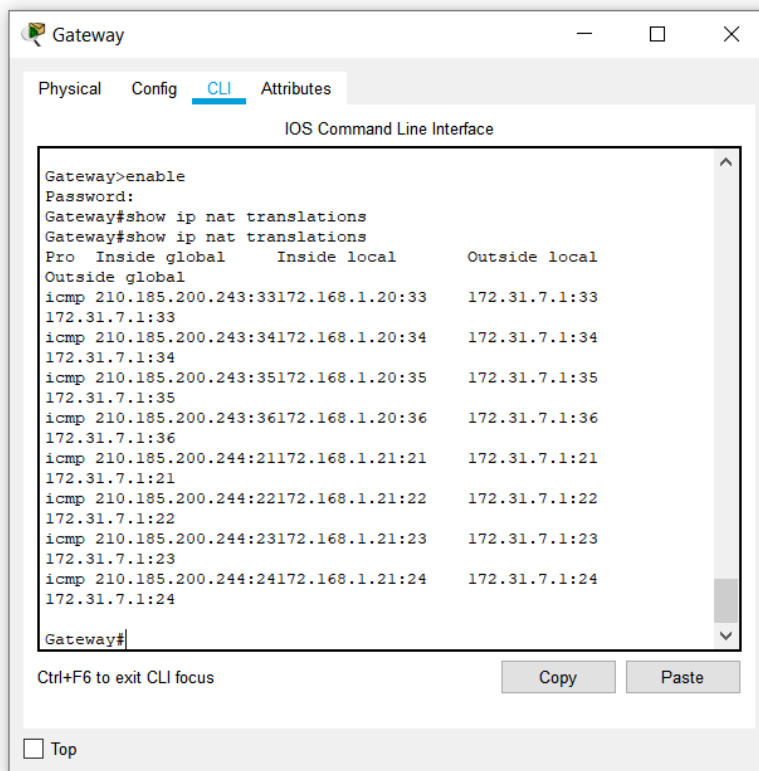
Paste



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Gateway



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IOS Command Line Interface

```
icmp 210.185.200.243:36172.168.1.20:36    172.31.7.1:36
172.31.7.1:36
icmp 210.185.200.244:21172.168.1.21:21    172.31.7.1:21
172.31.7.1:21
icmp 210.185.200.244:22172.168.1.21:22    172.31.7.1:22
172.31.7.1:22
icmp 210.185.200.244:23172.168.1.21:23    172.31.7.1:23
172.31.7.1:23
icmp 210.185.200.244:24172.168.1.21:24    172.31.7.1:24
172.31.7.1:24
```

```
Gateway#show ip nat statistics
Total translations: 0 (0 static, 0 dynamic, 0 extended)
Outside Interfaces: Serial0/0/1
Inside Interfaces: GigabitEthernet0/1
Hits: 157 Misses: 43
Expired translations: 41
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

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