CS305-2022Spring Lab9 Report

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Lab Time：Thursday 10:20 a.m. to 12:10 p.m.

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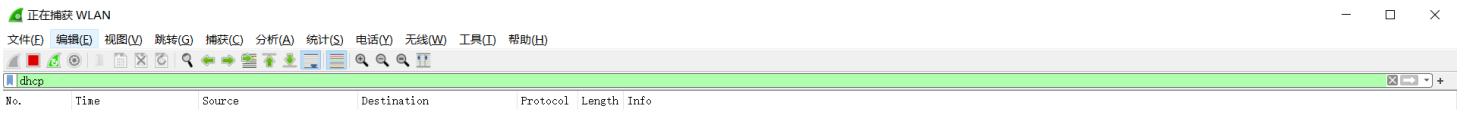
Practice9-1: DHCP

Open wireshark and set the display filter:

```
dhcp
```

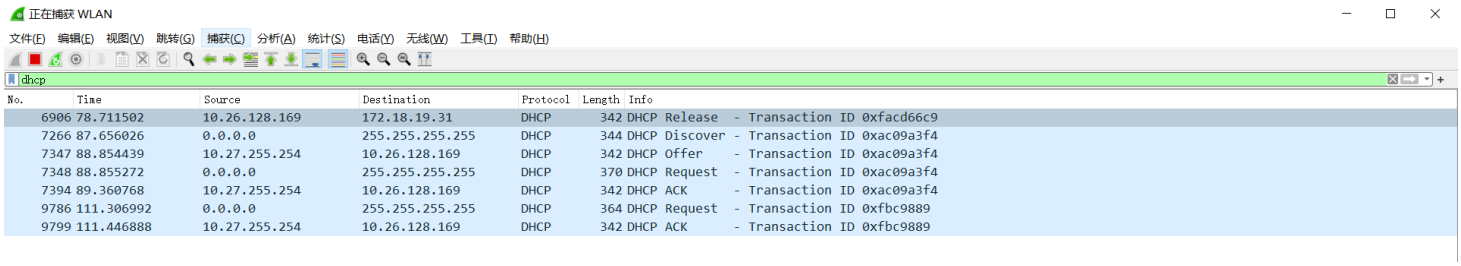
There is no packet now.



Type the following in the cmd:

```
ipconfig /release
ipconfig /renew
```

We can see there are some DHCP packets:



Q1

For the DHCP request:

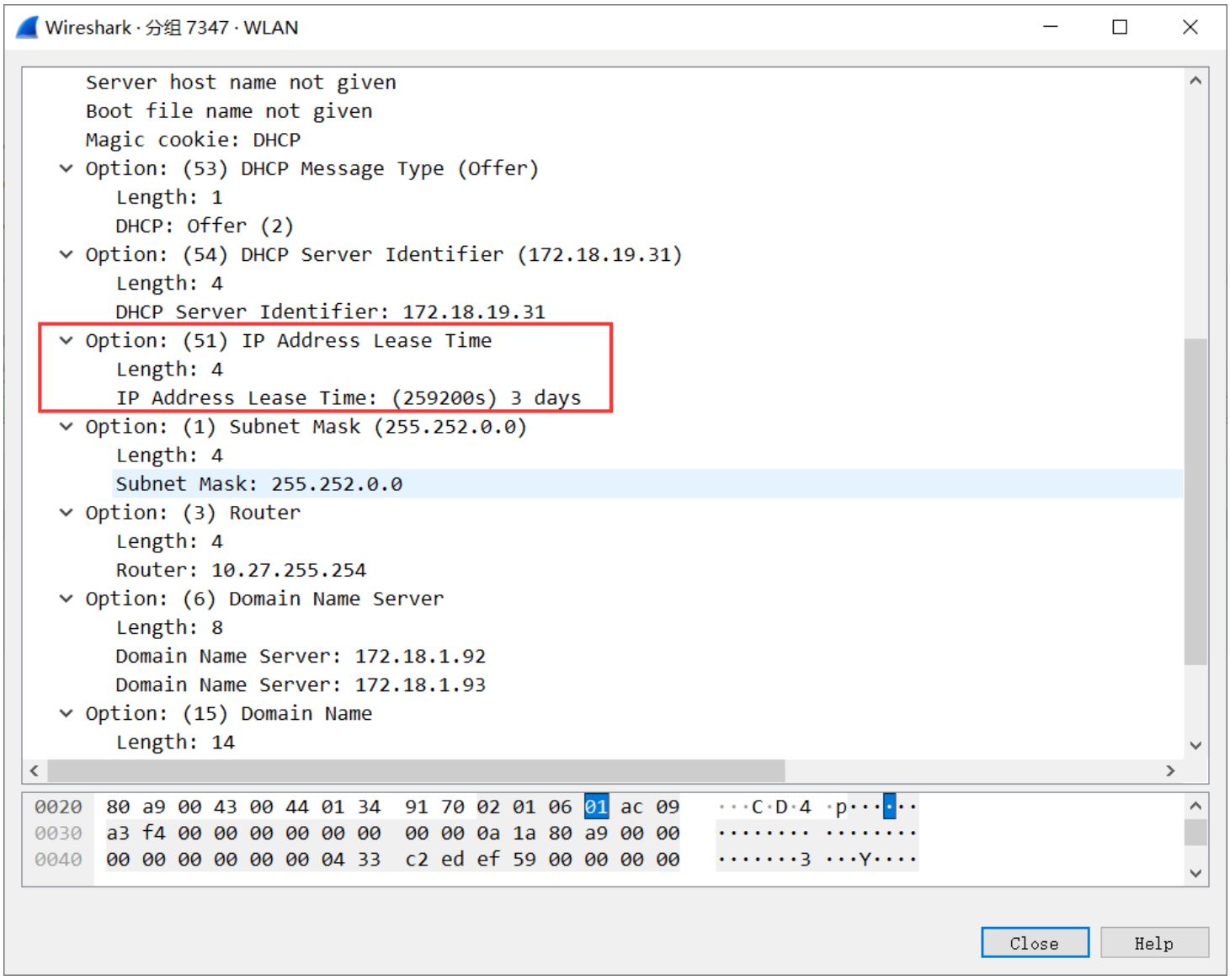
- src IP: 0.0.0.0, type: non routerable(未分配地址)
- dst IP: 255.255.255.255, type: Broadcast Address(广播地址)

Q2

It needs DNS to get the translated IP address so that it can contact with others on the Internet.

Q3

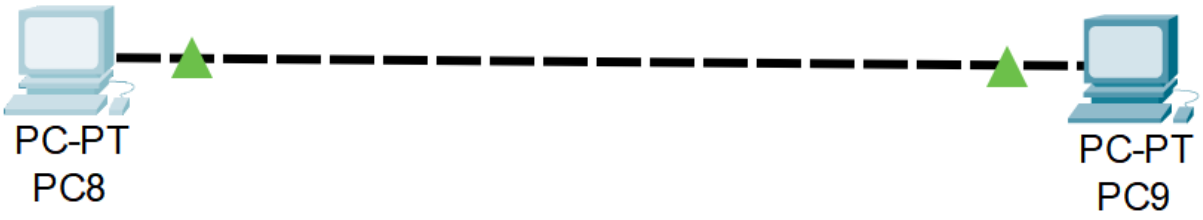
Lease Time:



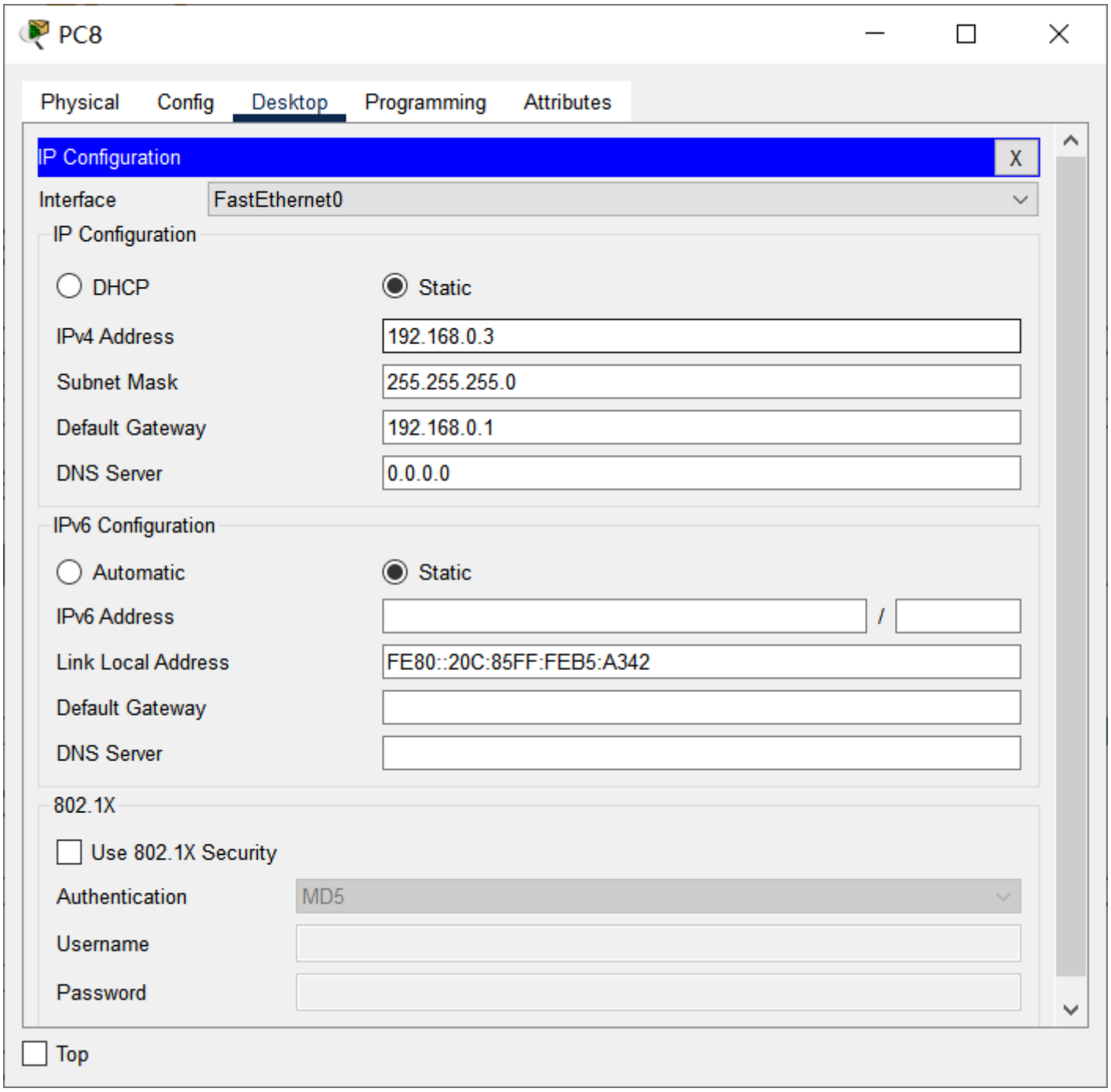
Its value is 259200s. The DHCP packet type is Offer.

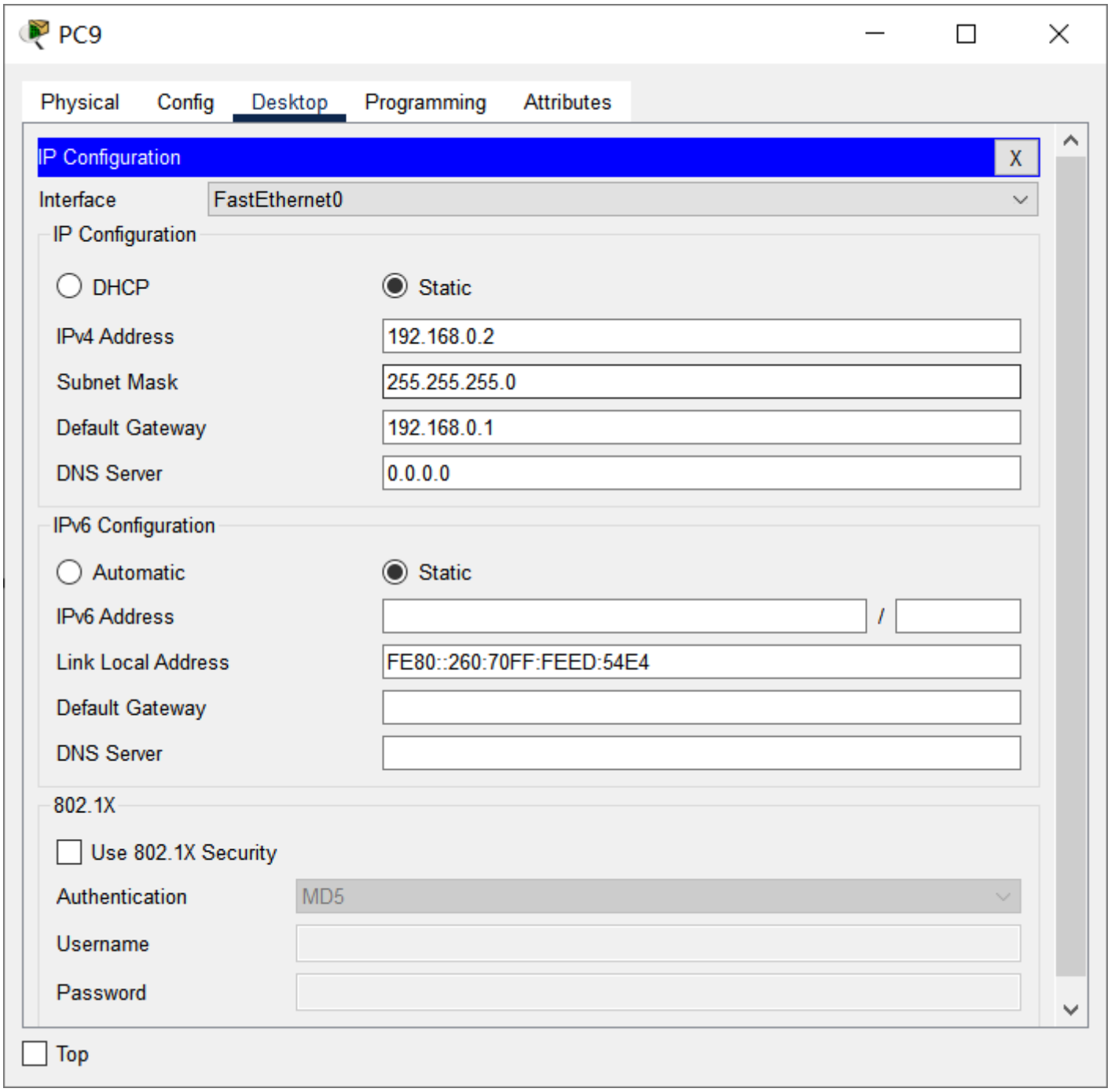
Practice9-2: Packet Tracer

Two PC connection

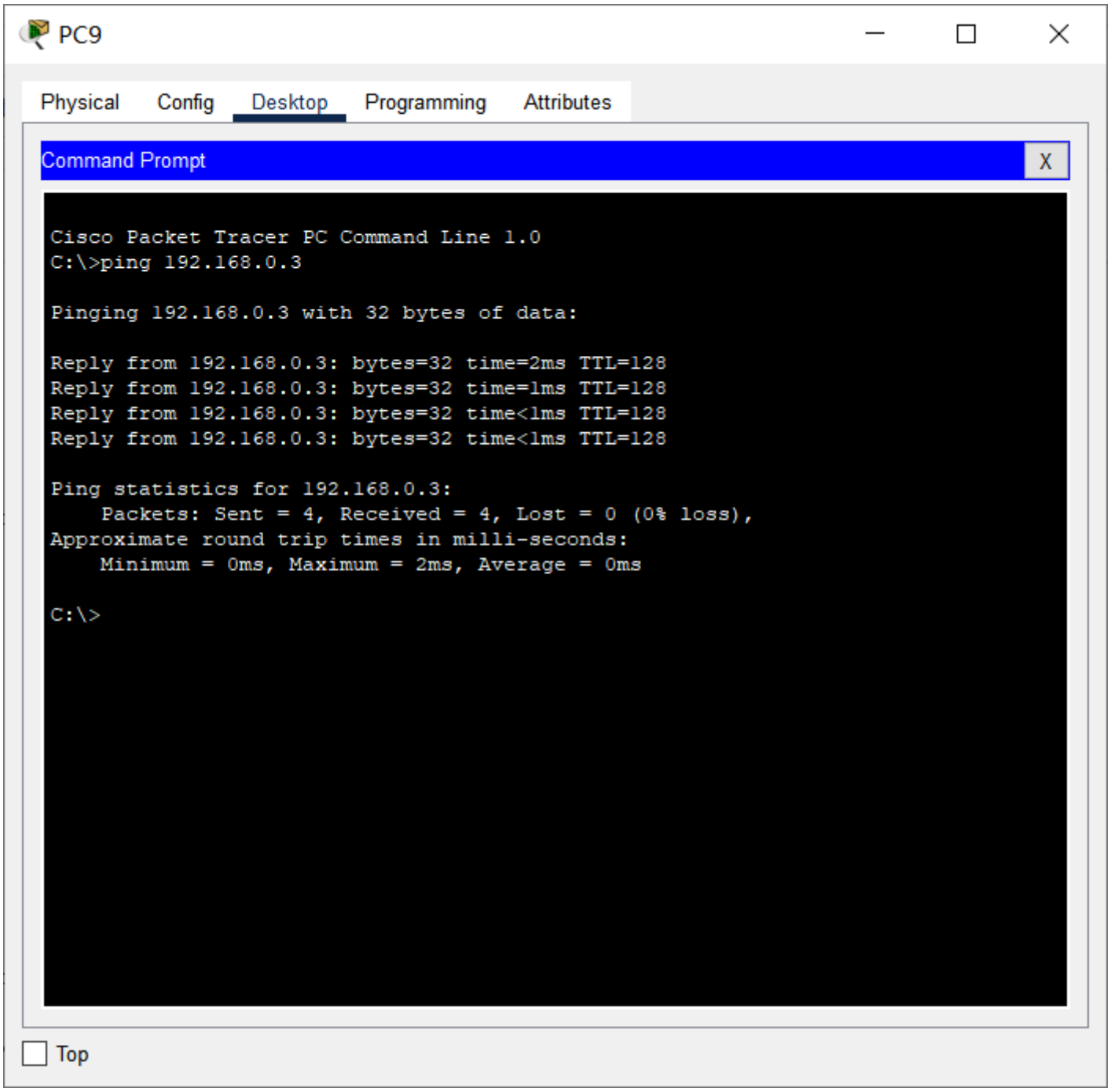


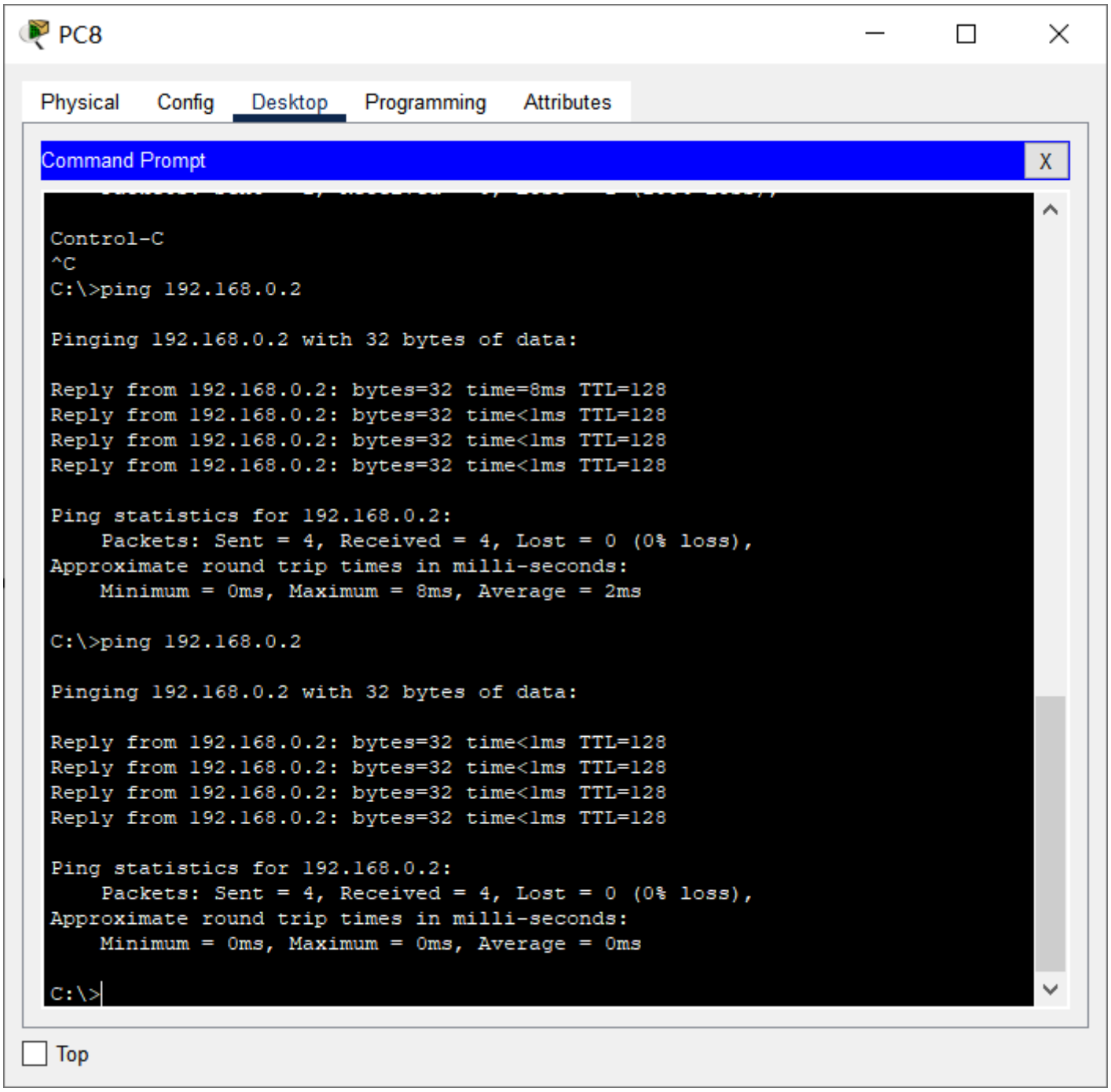
Their ip configuration:


PC8
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.0.3
Subnet Mask
255.255.255.0
Default Gateway
192.168.0.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::20C:85FF:FEB5:A342
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top



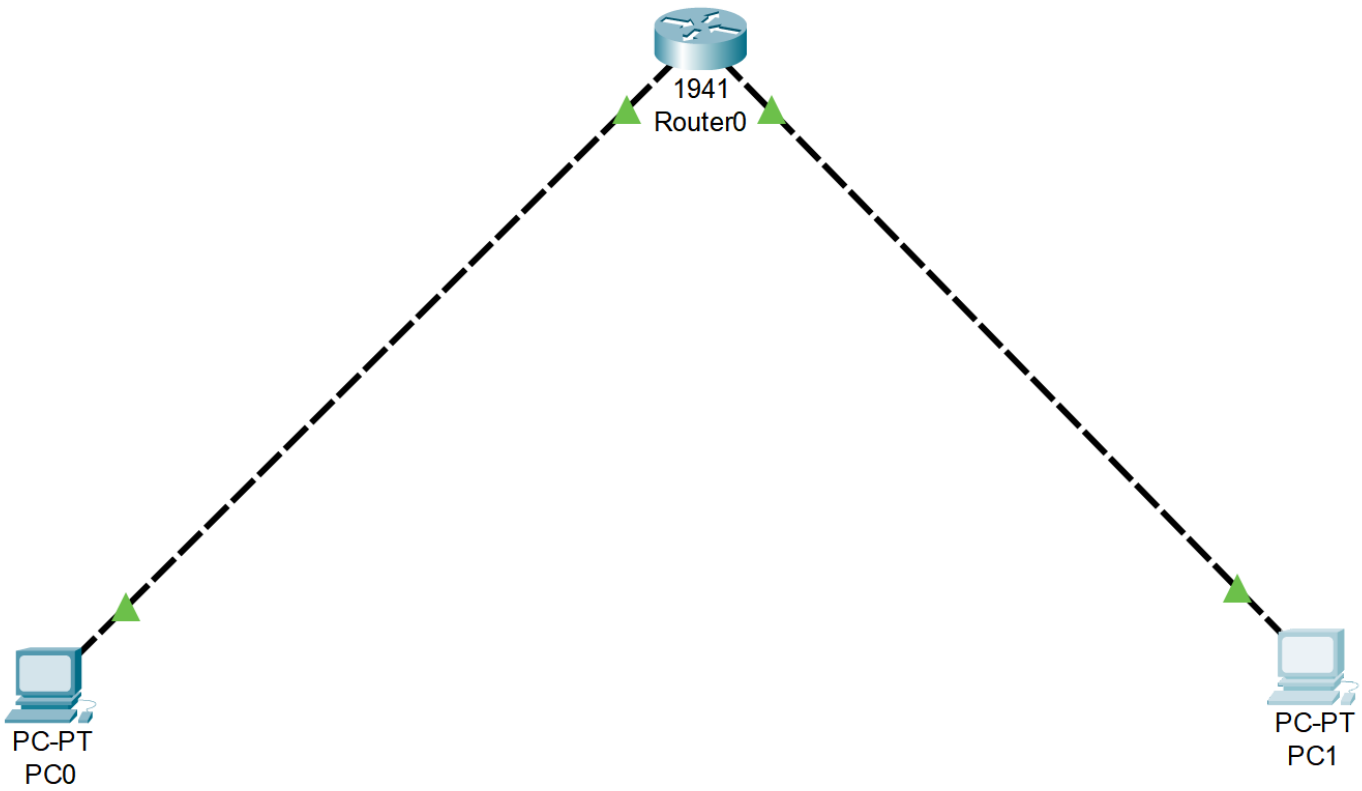
Connection test:


PC9
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.3
Pinging 192.168.0.3 with 32 bytes of data:
Reply from 192.168.0.3: bytes=32 time=2ms TTL=128
Reply from 192.168.0.3: bytes=32 time=1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.0.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 2ms, Average = 0ms
C:\>
Top

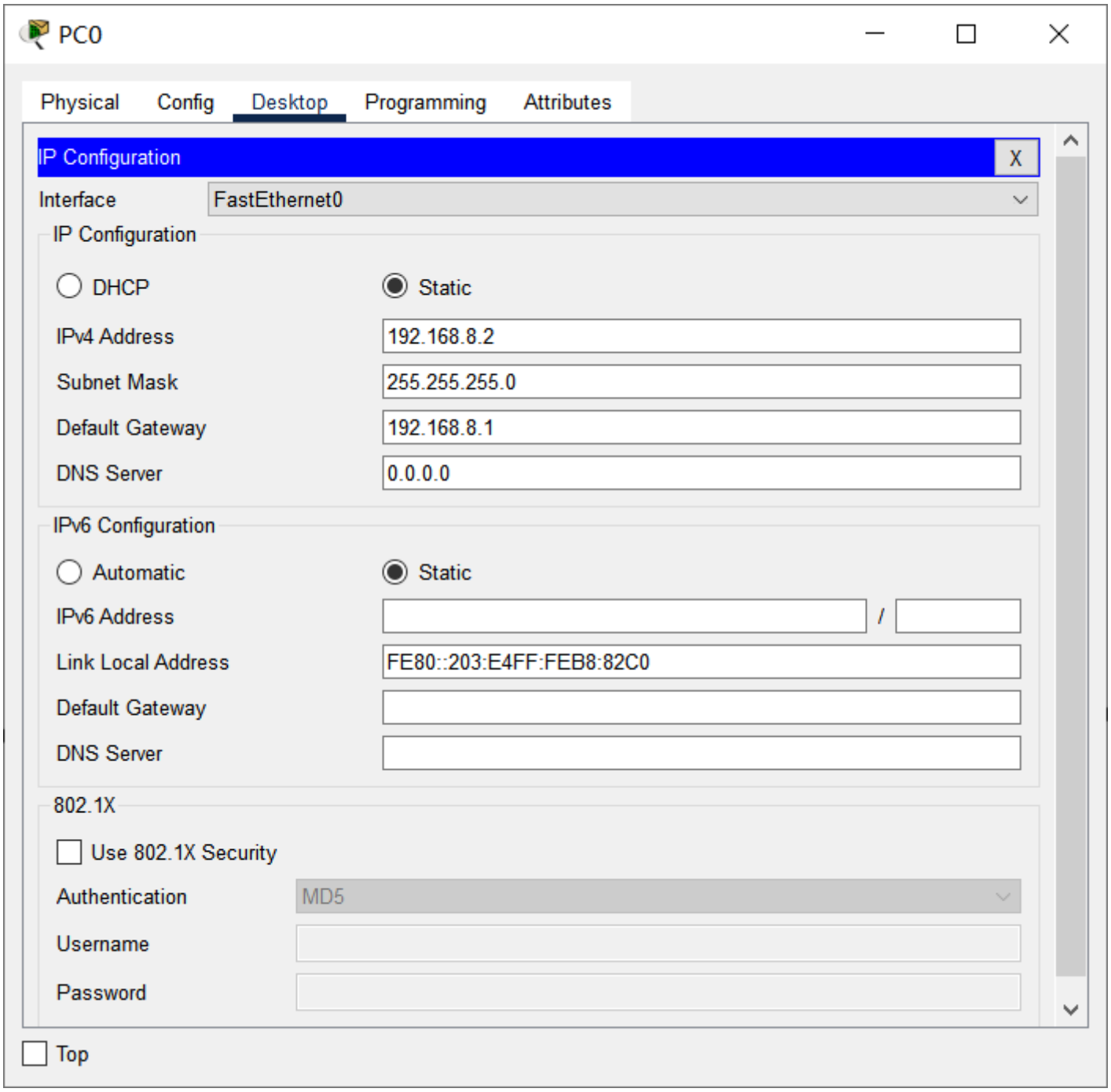


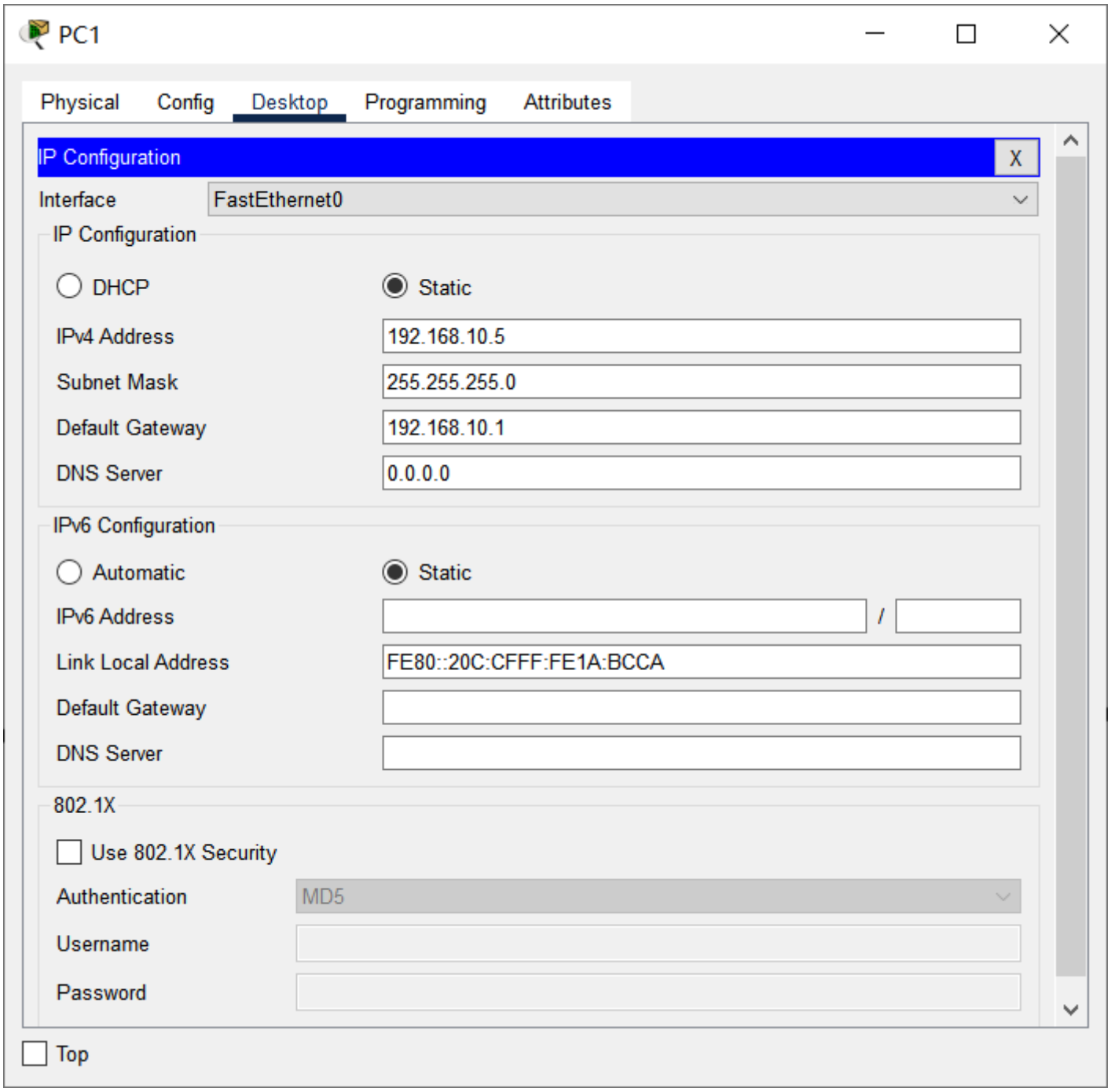
We can see that they could reach each other.

Two PC & One Route

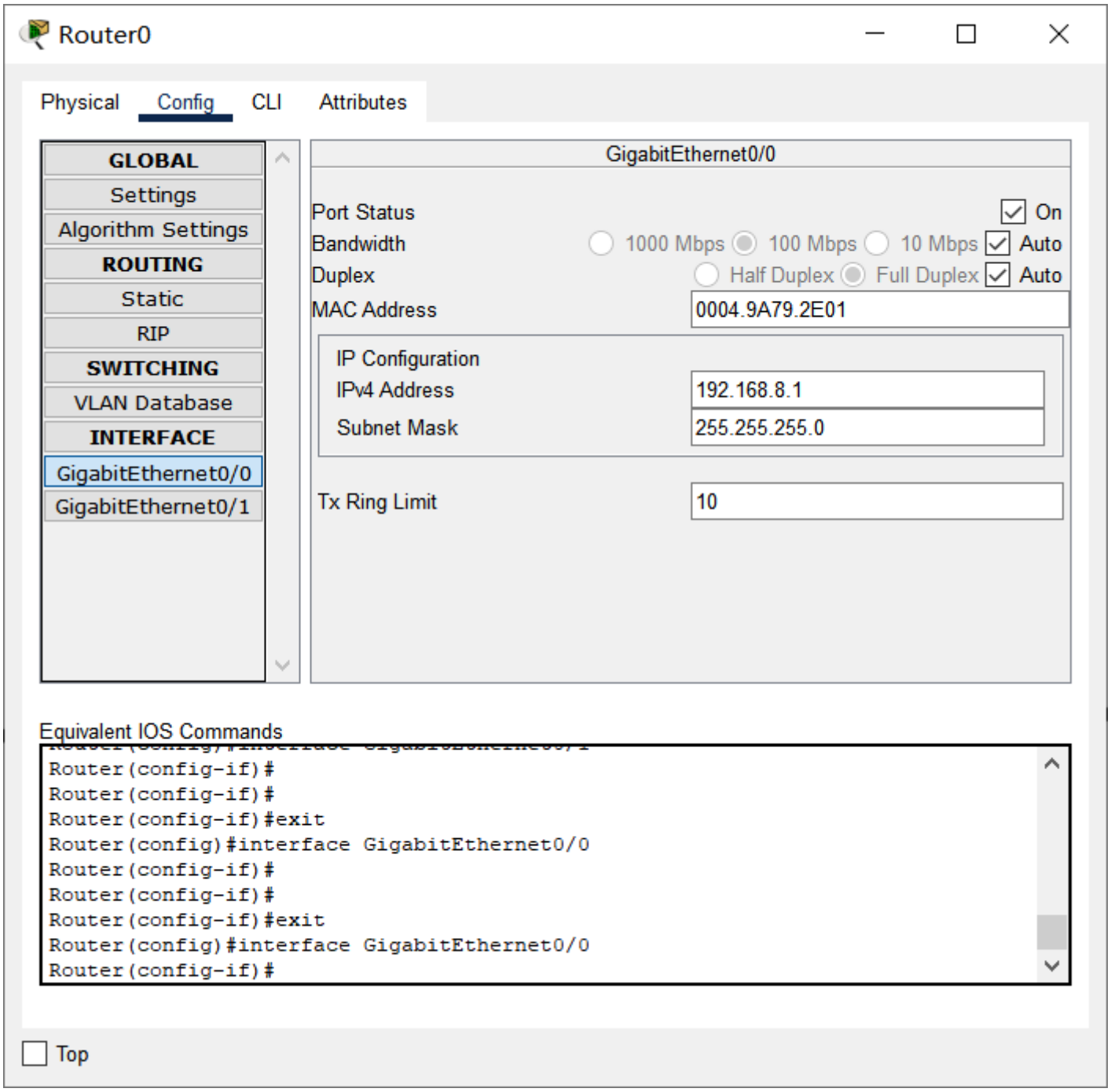


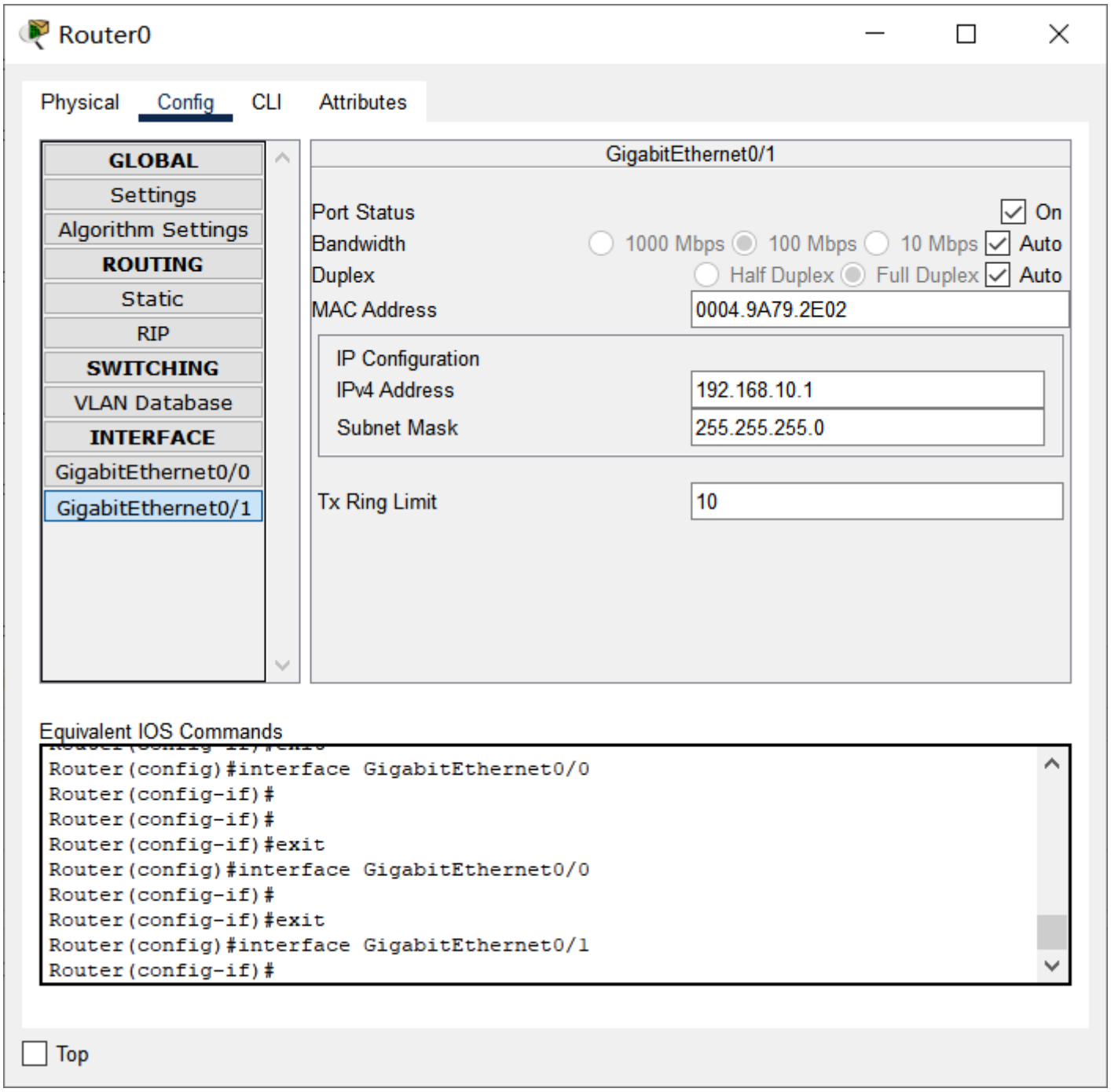
Their ip configuration:


PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.8.2
Subnet Mask
255.255.255.0
Default Gateway
192.168.8.1
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
/
Link Local Address
FE80::203:E4FF:FEB8:82C0
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top

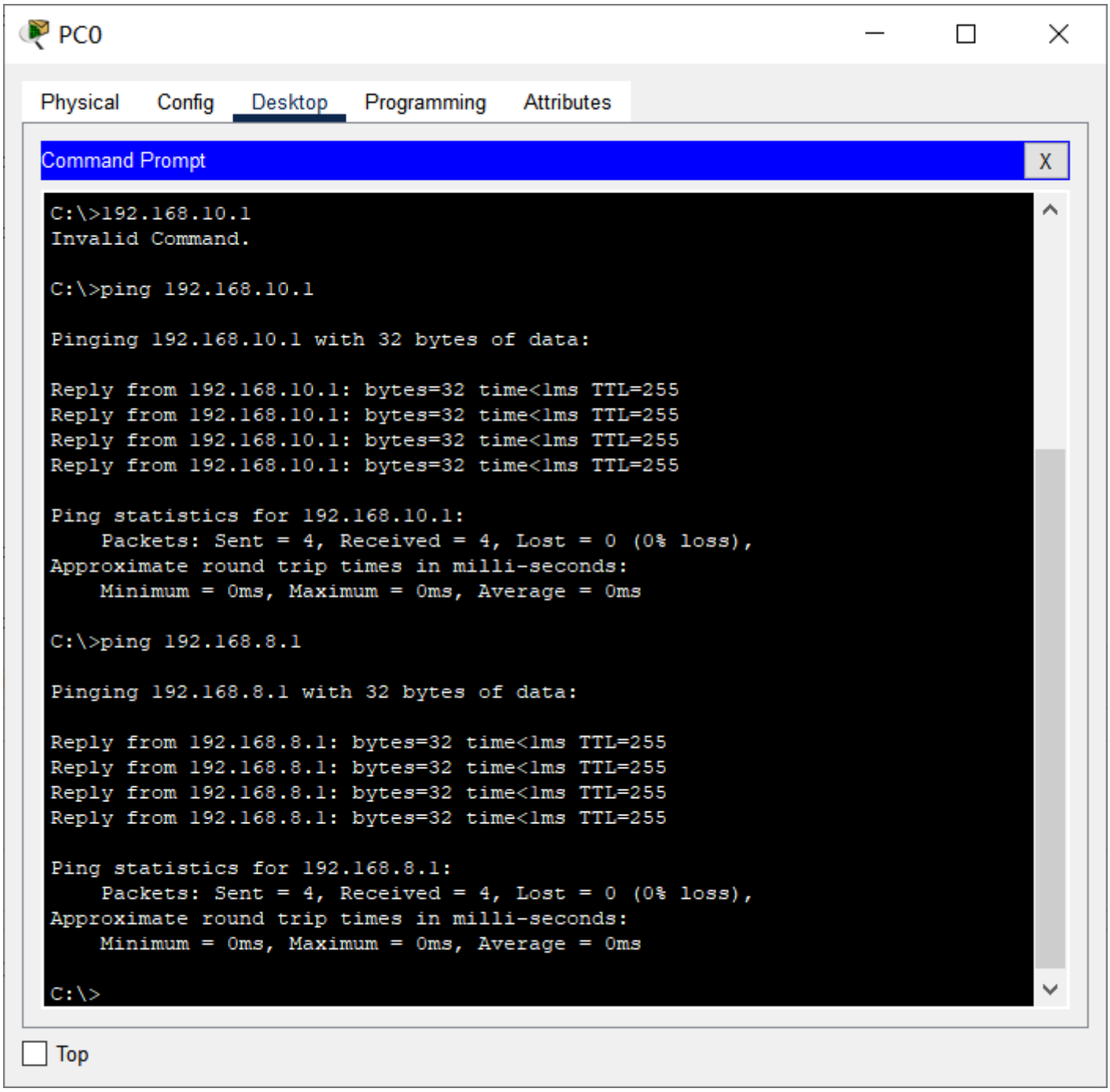


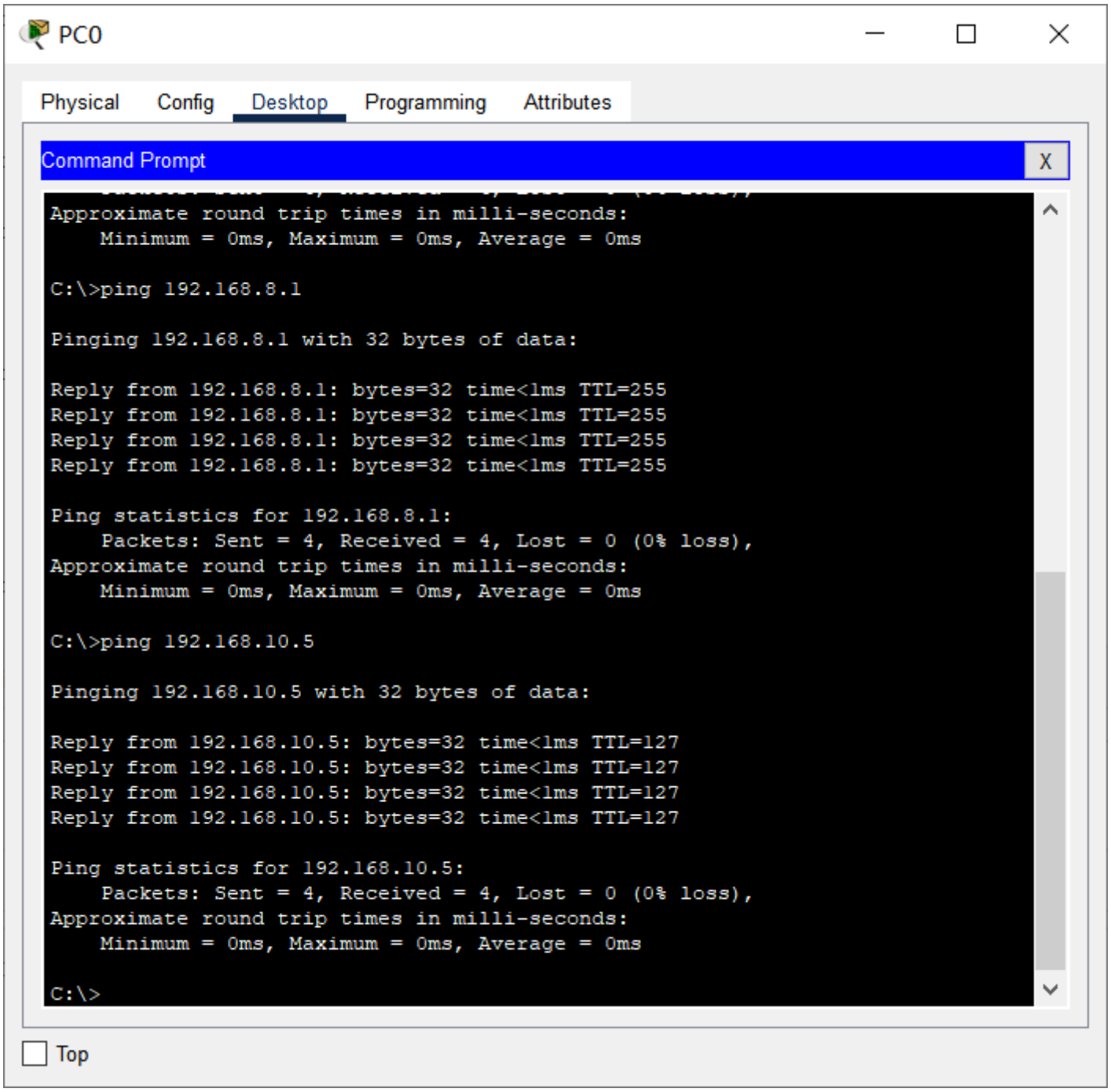
Router configuration:


Router0
Physical
Config
CLI
Attributes
GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0
GigabitEthernet0/1
GigabitEthernet0/0
Port Status
On
Bandwidth
1000 Mbps
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0004.9A79.2E01
IP Configuration
IPv4 Address
192.168.8.1
Subnet Mask
255.255.255.0
Tx Ring Limit
10
Equivalent IOS Commands
Router(config-if)#
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#
Top



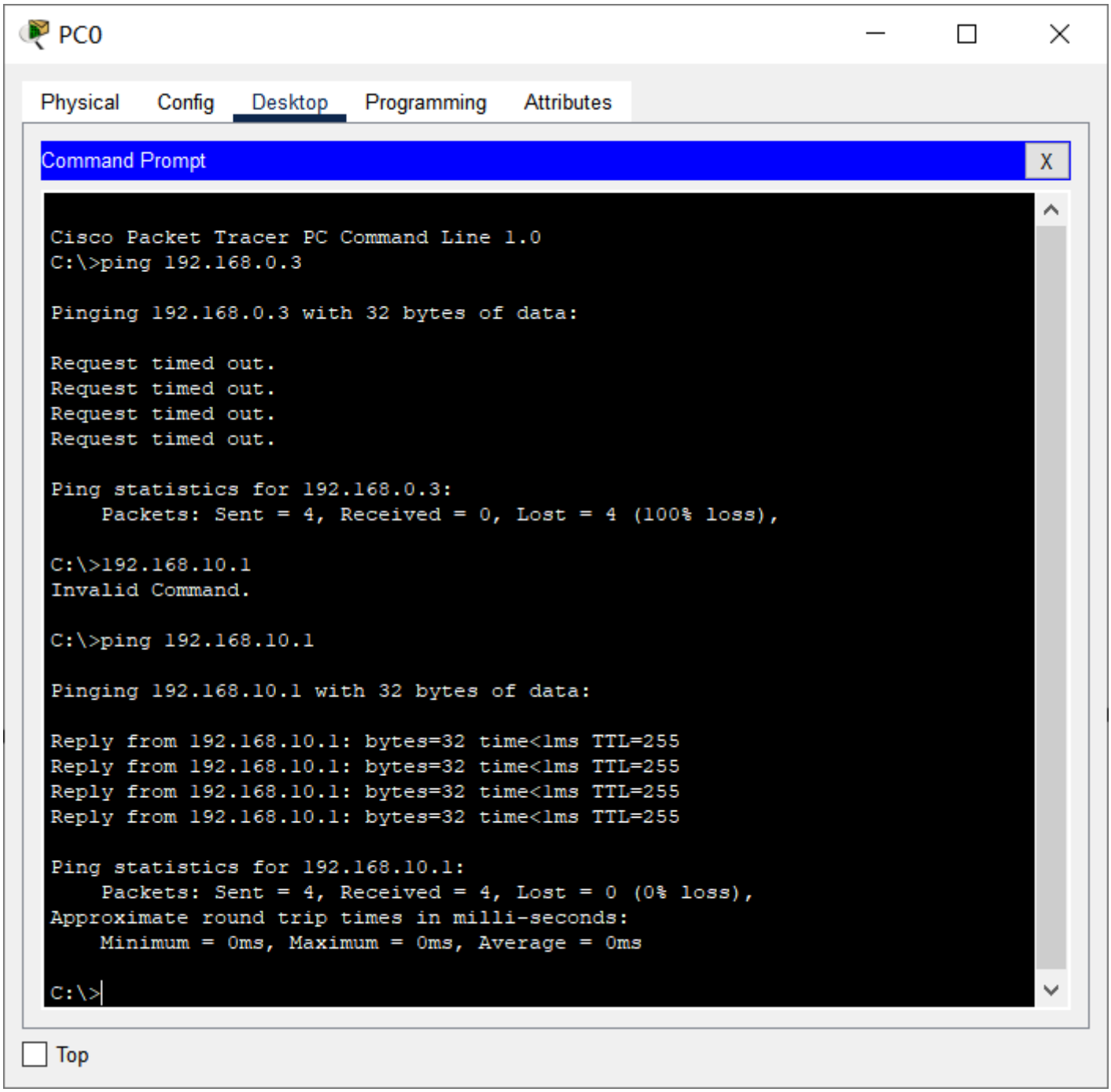
- PCs & Router connection test

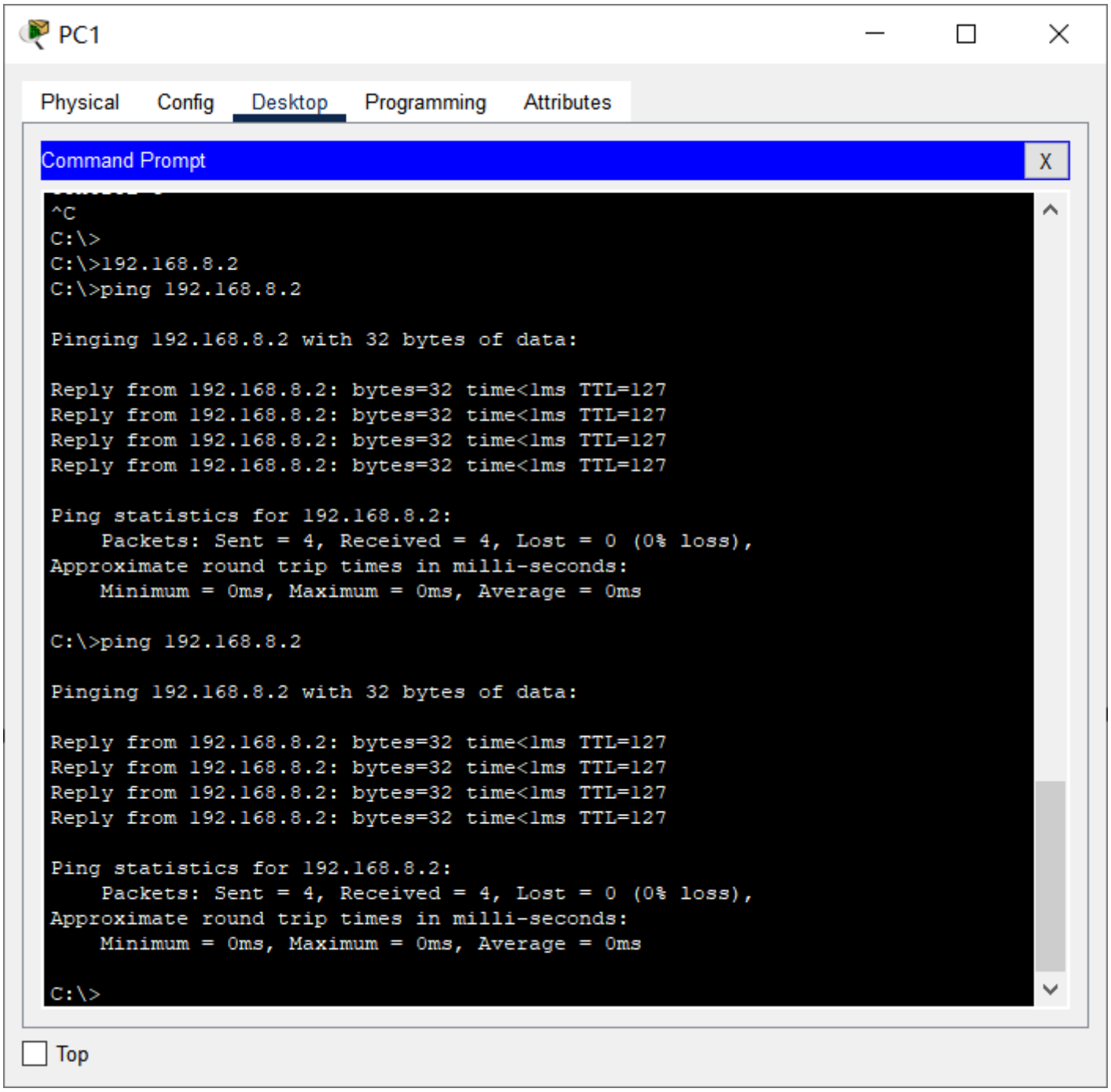

PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
C:\>192.168.10.1
Invalid Command.
C:\>ping 192.168.10.1
Pinging 192.168.10.1 with 32 bytes of data:
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Ping statistics for 192.168.10.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.8.1
Pinging 192.168.8.1 with 32 bytes of data:
Reply from 192.168.8.1: bytes=32 time<1ms TTL=255
Reply from 192.168.8.1: bytes=32 time<1ms TTL=255
Reply from 192.168.8.1: bytes=32 time<1ms TTL=255
Reply from 192.168.8.1: bytes=32 time<1ms TTL=255
Ping statistics for 192.168.8.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
Top



The PC cand contact with the routers correctly.

- Two PC connection test


PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.3
Pinging 192.168.0.3 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.0.3:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>192.168.10.1
Invalid Command.
C:\>ping 192.168.10.1
Pinging 192.168.10.1 with 32 bytes of data:
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Reply from 192.168.10.1: bytes=32 time<1ms TTL=255
Ping statistics for 192.168.10.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
Top



We can see that they could communicate with each other.