

Assignment 8:

Introduction

In this assignment, you will:

1. Add a static network route to R1 and another to R2 using exit interfaces.
2. Verify that PC0 and PC1 can ping each other.

Already Configured for you:

Overall Aim
Add a static network route to R1 and another to R2 using exit interfaces.
Verify that PC0 and PC1 can ping each other.

Already Configured for you
=====

Basic configuration with the usual credentials
student / cisco123
secret password cisco

Host static IP address and their default gateway

Router interfaces

Task 1
=====

Verify that PC0 cannot ping PC1 without the routes but they can ping their gate

Task 2
=====

Add the required route on the relevant router.
Verify that it is using the exit interface with the 'show ip route' command.
Verify that PC0 and PC1 can ping each other.

Addressing Information
=====

Device	Interface	IP Address
PC0	Fa0	192.168.0.2/24
PC1	Fa0	192.168.1.2/24
R1	G10/0/0	192.168.0.1/24
R1	S0/0/0	10.1.0.1/30
R2	G10/0/0	192.168.1.1/24
R2	S0/0/1	10.1.0.2/30

Time Elapsed: 00:00:22 Completion: 0%

Check Results Back 1/1 Next

- Basic configuration with the usual credentials
 - student / cisco123
 - secret password cisco
- Host static IP address and their default gateway
- Router interfaces

Instructions

Complete the following tasks:

1. Task 1

1. Verify that PC0 cannot ping PC1 without the routes but they can ping their gateways.

2. Task 2

1. Add the required route on the relevant router.
2. Verify that it is using the exit interface with the 'show ip route' command.
3. Verify that PC0 and PC1 can ping each other.

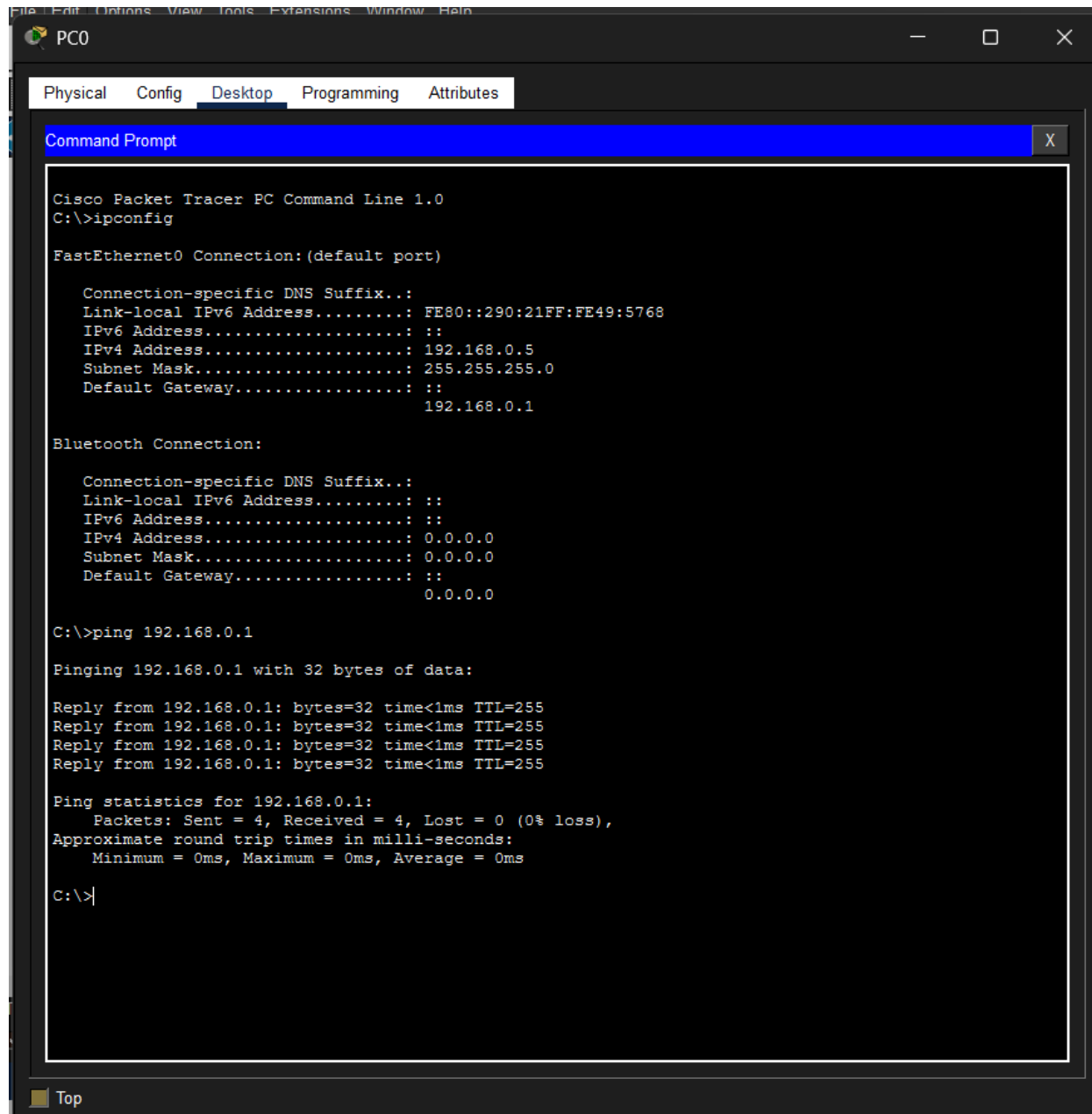
Addressing Information:

Addressing Information:

Device	Interface	IP Address
PC0	Fa0	192.168.0.5/24
PC1	Fa0	192.168.1.5/24
R1	Gi0/0 Se0/0/0	192.168.0.1/24 10.1.0.1/30
R2	Gi0/0 Se0/0/1	192.168.1.1/24 10.1.0.2/30

TASK 1: Verify initial connectivity.

- 1) From **PC0**, ping its gateway:



```
PC0
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: FE80::290:21FF:FE49:5768
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 192.168.0.5
    Subnet Mask . . . . .: 255.255.255.0
    Default Gateway . . . . .: ::
                                   192.168.0.1

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: ::
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 0.0.0.0
    Subnet Mask . . . . .: 0.0.0.0
    Default Gateway . . . . .: ::
                                   0.0.0.0

C:\>ping 192.168.0.1

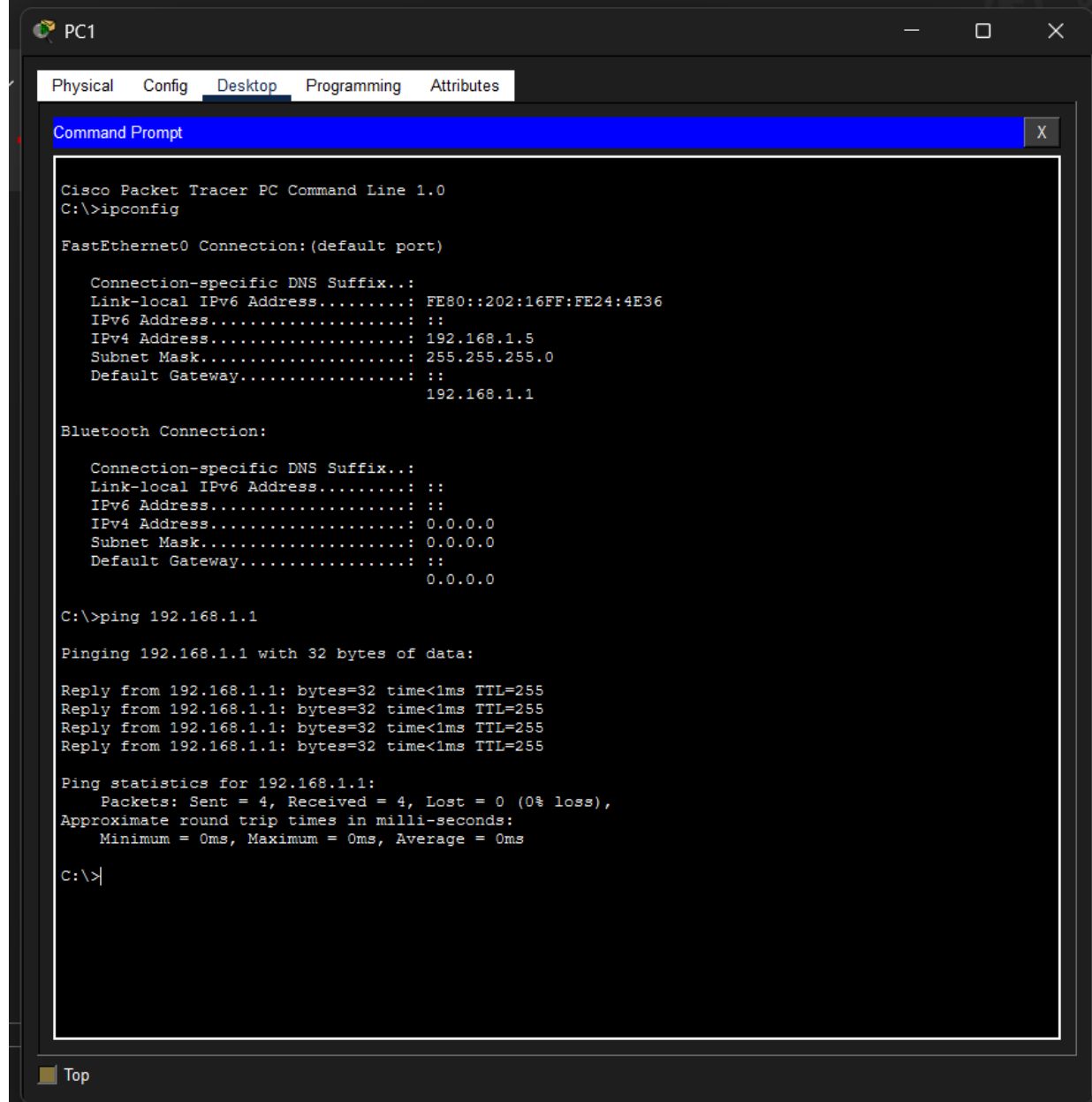
Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

2) From PC1 ping its gateway:



```
PC1
Physical Config Desktop Programming Attributes
Command Prompt X

Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig

FastEthernet0 Connection: (default port)

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: FE80::202:16FF:FE24:4E36
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 192.168.1.5
    Subnet Mask . . . . .: 255.255.255.0
    Default Gateway . . . . .: ::
                                   192.168.1.1

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Link-local IPv6 Address . . . . .: ::
    IPv6 Address . . . . .: ::
    IPv4 Address . . . . .: 0.0.0.0
    Subnet Mask . . . . .: 0.0.0.0
    Default Gateway . . . . .: ::
                                   0.0.0.0

C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

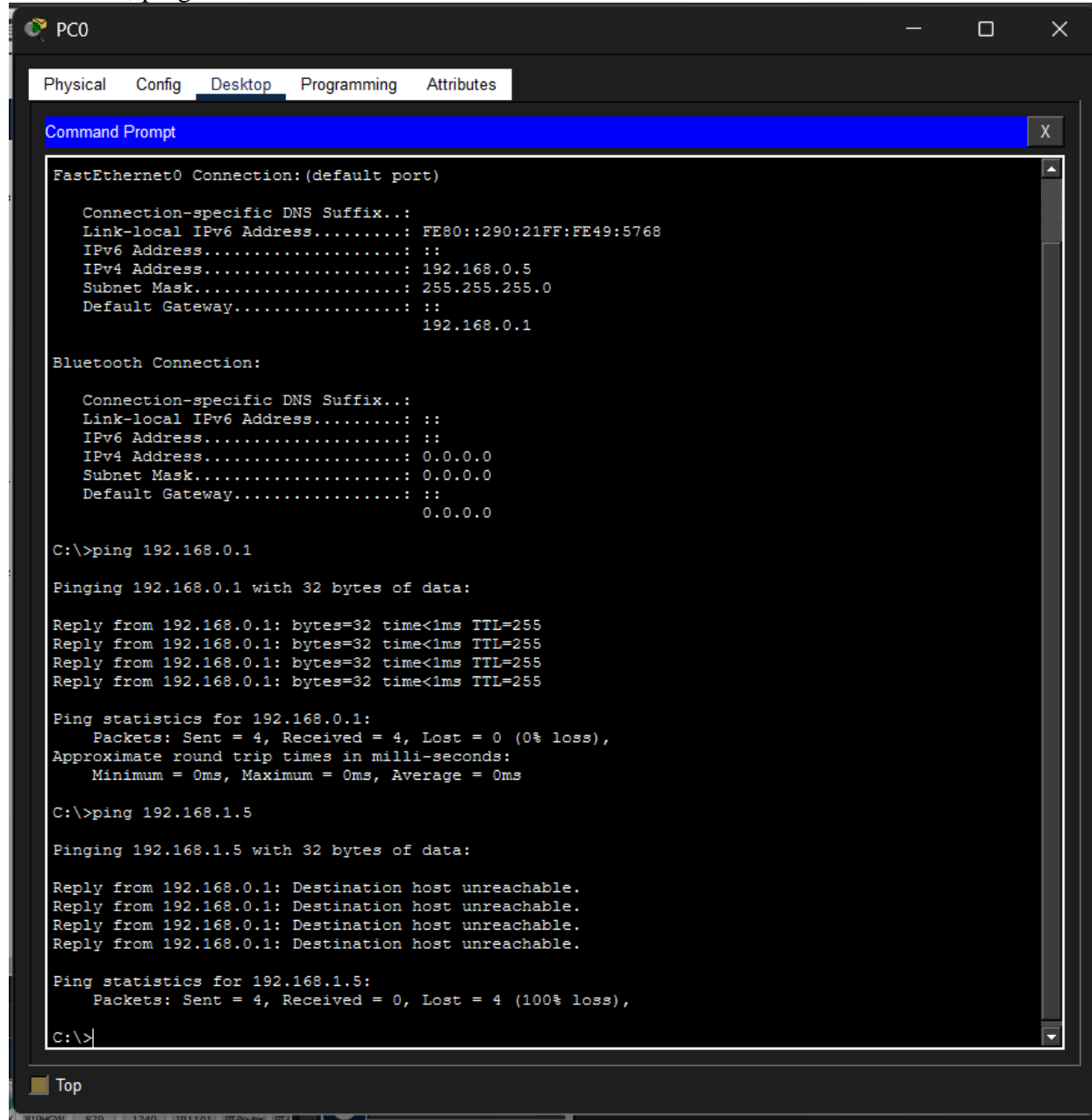
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|

Top
```

3) From **PC0**, ping **PC1**:



The screenshot shows a PC0 desktop environment with a Command Prompt window open. The window title is "PC0" and it has tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, and the "Command Prompt" window is open. The Command Prompt shows the following output:

```
FastEthernet0 Connection: (default port)

Connection-specific DNS Suffix...:
Link-local IPv6 Address . . . . .: FE80::290:21FF:FE49:5768
IPv6 Address . . . . .: ::
IPv4 Address . . . . .: 192.168.0.5
Subnet Mask . . . . .: 255.255.255.0
Default Gateway . . . . .: ::
                          192.168.0.1

Bluetooth Connection:

Connection-specific DNS Suffix...:
Link-local IPv6 Address . . . . .: ::
IPv6 Address . . . . .: ::
IPv4 Address . . . . .: 0.0.0.0
Subnet Mask . . . . .: 0.0.0.0
Default Gateway . . . . .: ::
                          0.0.0.0

C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:

Reply from 192.168.0.1: Destination host unreachable.
Reply from 192.168.0.1: Destination host unreachable.
Reply from 192.168.0.1: Destination host unreachable.
Reply from 192.168.0.1: Destination host unreachable.

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

The output shows that PC0 has a default gateway of 192.168.0.1. The first ping to 192.168.0.1 is successful. The second ping to 192.168.1.5 fails with "Destination host unreachable" for all four attempts.

Failed!

TASK 2: – Add static routes using *exit* interfaces.

We must tell each router how to reach the *remote LAN* via the *point-to-point interface*.

On R1:

```
R1
Physical Config CLI Attributes

User Access Verification
Username:
% Username: timeout expired!

Press RETURN to get started!

User Access Verification
Username: student
Password:

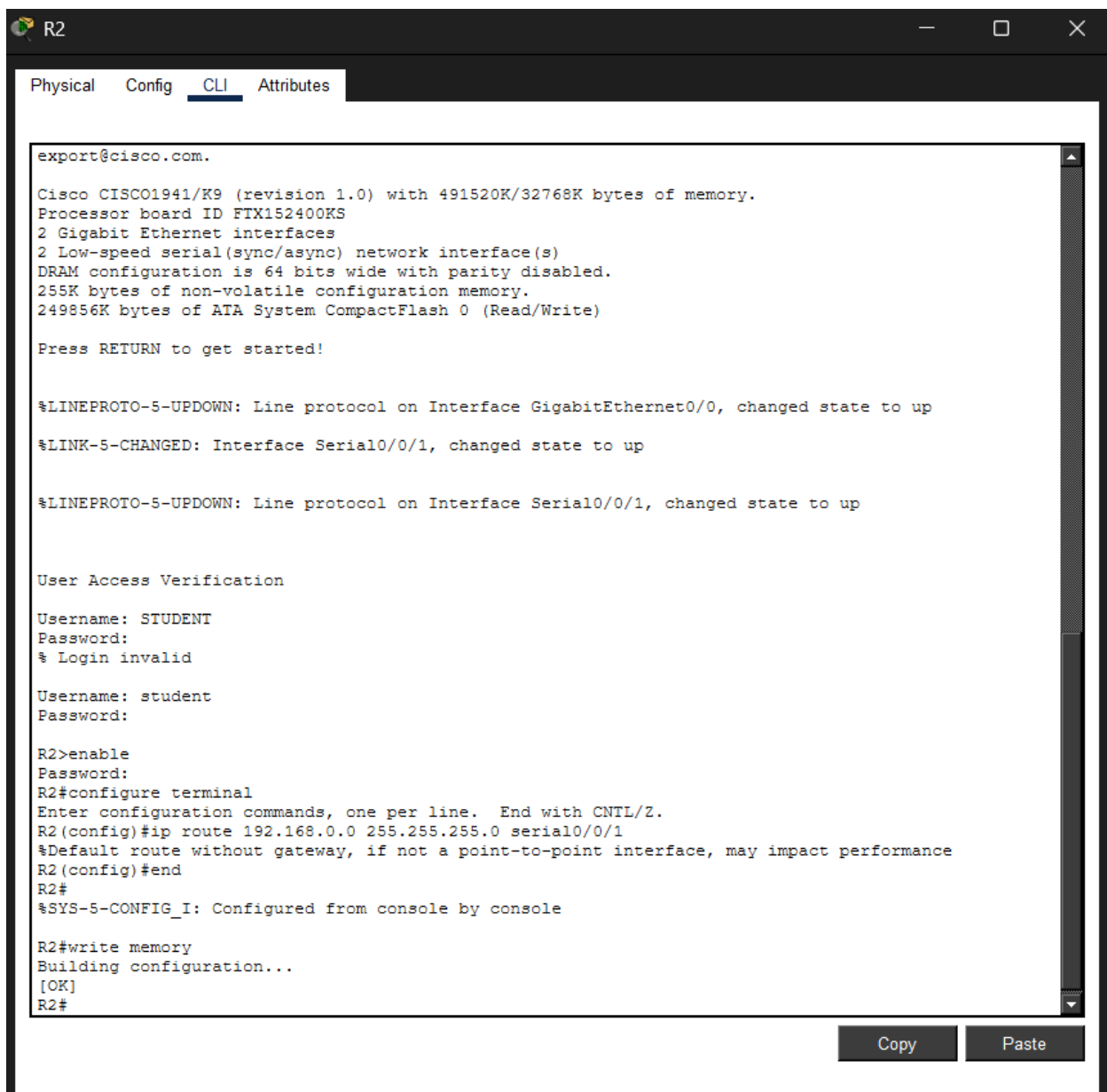
R1>enable
Password:
R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip route 192.168.1.9 255.255.255.0 serial0/0/0
%Default route without gateway, if not a point-to-point interface, may impact performance
%Inconsistent address and mask
R1(config)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#write memory
Building configuration...
[OK]
R1#
```

Copy Paste

Top

On R2:

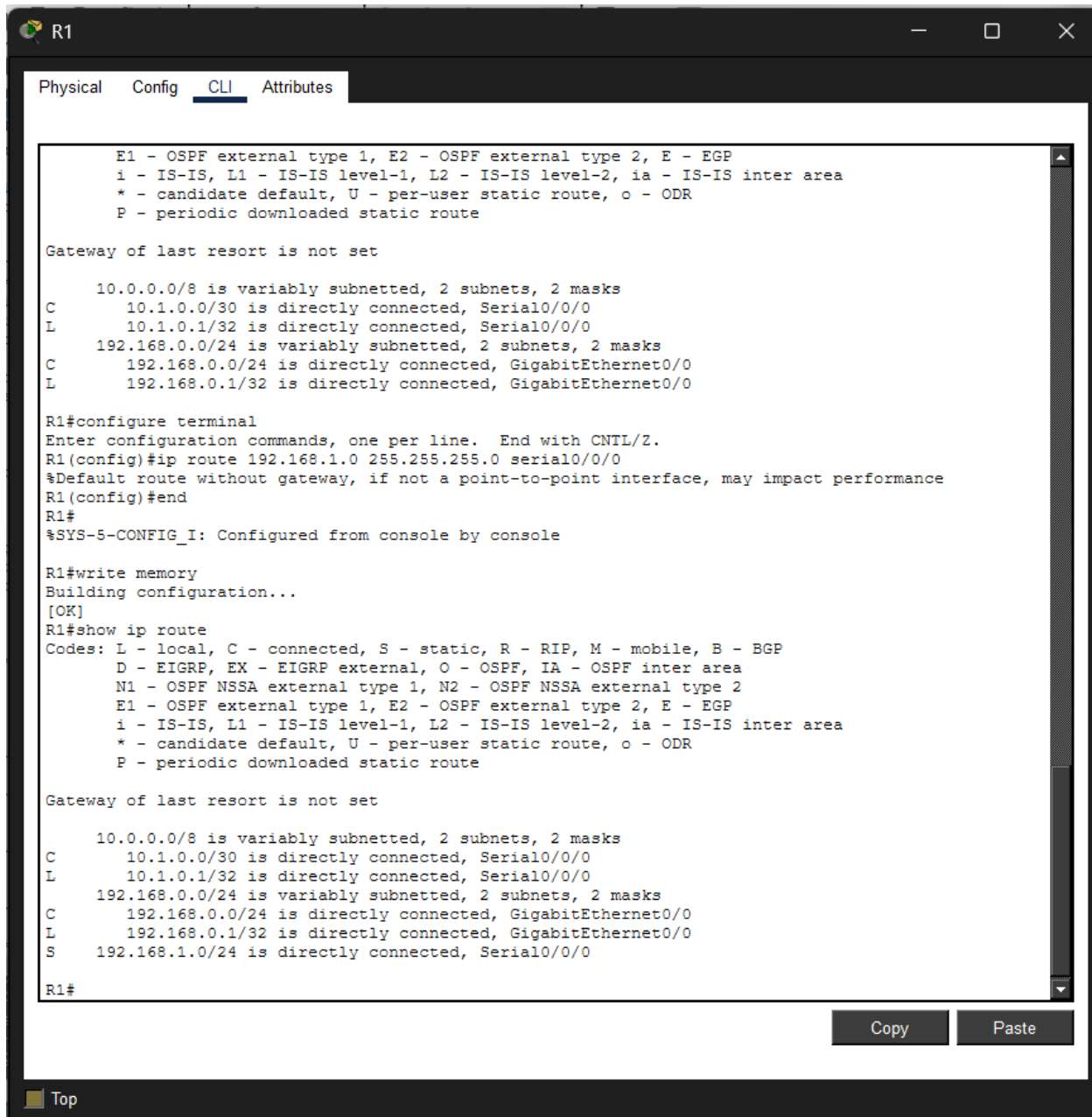


The screenshot shows a terminal window titled 'R2' with tabs for 'Physical', 'Config', 'CLI', and 'Attributes'. The 'CLI' tab is active, displaying the following text:

```
export@cisco.com.  
  
Cisco CISC01941/K9 (revision 1.0) with 491520K/32768K bytes of memory.  
Processor board ID FTX152400KS  
2 Gigabit Ethernet interfaces  
2 Low-speed serial(sync/async) network interface(s)  
DRAM configuration is 64 bits wide with parity disabled.  
255K bytes of non-volatile configuration memory.  
249856K bytes of ATA System CompactFlash 0 (Read/Write)  
  
Press RETURN to get started!  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up  
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1, changed state to up  
  
User Access Verification  
  
Username: STUDENT  
Password:  
% Login invalid  
  
Username: student  
Password:  
  
R2>enable  
Password:  
R2#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
R2(config)#ip route 192.168.0.0 255.255.255.0 serial0/0/1  
%Default route without gateway, if not a point-to-point interface, may impact performance  
R2(config)#end  
R2#  
%SYS-5-CONFIG_I: Configured from console by console  
  
R2#write memory  
Building configuration...  
[OK]  
R2#
```

At the bottom right of the terminal window, there are two buttons: 'Copy' and 'Paste'.

VERIFICATIONS: On both routers.



```
R1
Physical Config CLI Attributes

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

  10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    10.1.0.0/30 is directly connected, Serial0/0/0
L    10.1.0.1/32 is directly connected, Serial0/0/0
  192.168.0.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.0.0/24 is directly connected, GigabitEthernet0/0
L    192.168.0.1/32 is directly connected, GigabitEthernet0/0

R1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip route 192.168.1.0 255.255.255.0 serial0/0/0
%Default route without gateway, if not a point-to-point interface, may impact performance
R1(config)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#write memory
Building configuration...
[OK]
R1#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

  10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    10.1.0.0/30 is directly connected, Serial0/0/0
L    10.1.0.1/32 is directly connected, Serial0/0/0
  192.168.0.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.0.0/24 is directly connected, GigabitEthernet0/0
L    192.168.0.1/32 is directly connected, GigabitEthernet0/0
S    192.168.1.0/24 is directly connected, Serial0/0/0

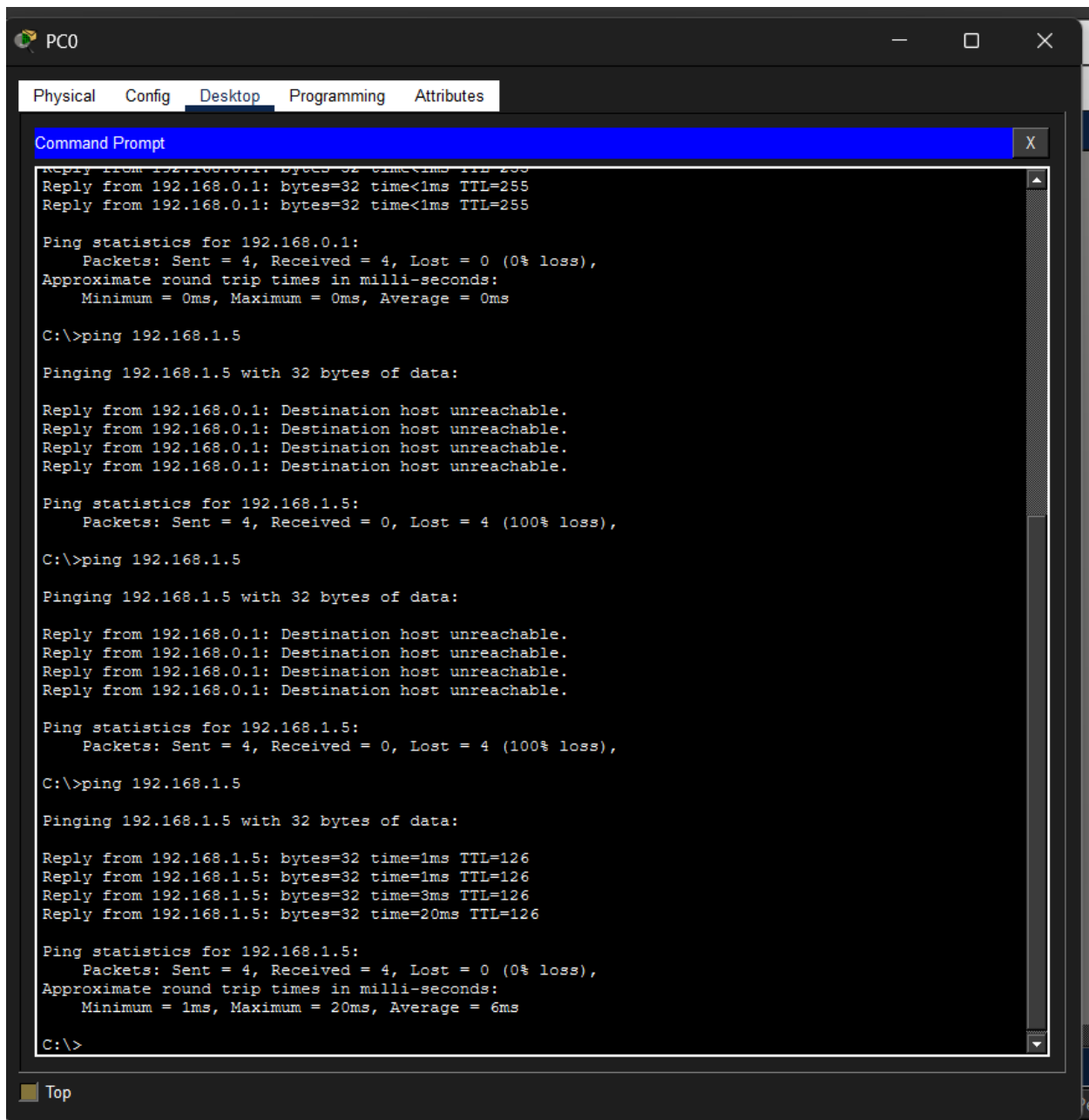
R1#
```

Copy Paste

Top



From PC0 ping PC1:



The screenshot shows a PC0 desktop environment with a dark theme. The 'Desktop' tab is selected in the top navigation bar. A 'Command Prompt' window is open, displaying the results of a ping command from PC0 to PC1 (192.168.1.5). The window title is 'PC0' and it has standard minimize, maximize, and close buttons. The Command Prompt shows the following output:

```
Command Prompt
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255
Reply from 192.168.0.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:

Reply from 192.168.0.1: Destination host unreachable.
Reply from 192.168.0.1: Destination host unreachable.
Reply from 192.168.0.1: Destination host unreachable.
Reply from 192.168.0.1: Destination host unreachable.

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:

Reply from 192.168.0.1: Destination host unreachable.
Reply from 192.168.0.1: Destination host unreachable.
Reply from 192.168.0.1: Destination host unreachable.
Reply from 192.168.0.1: Destination host unreachable.

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:

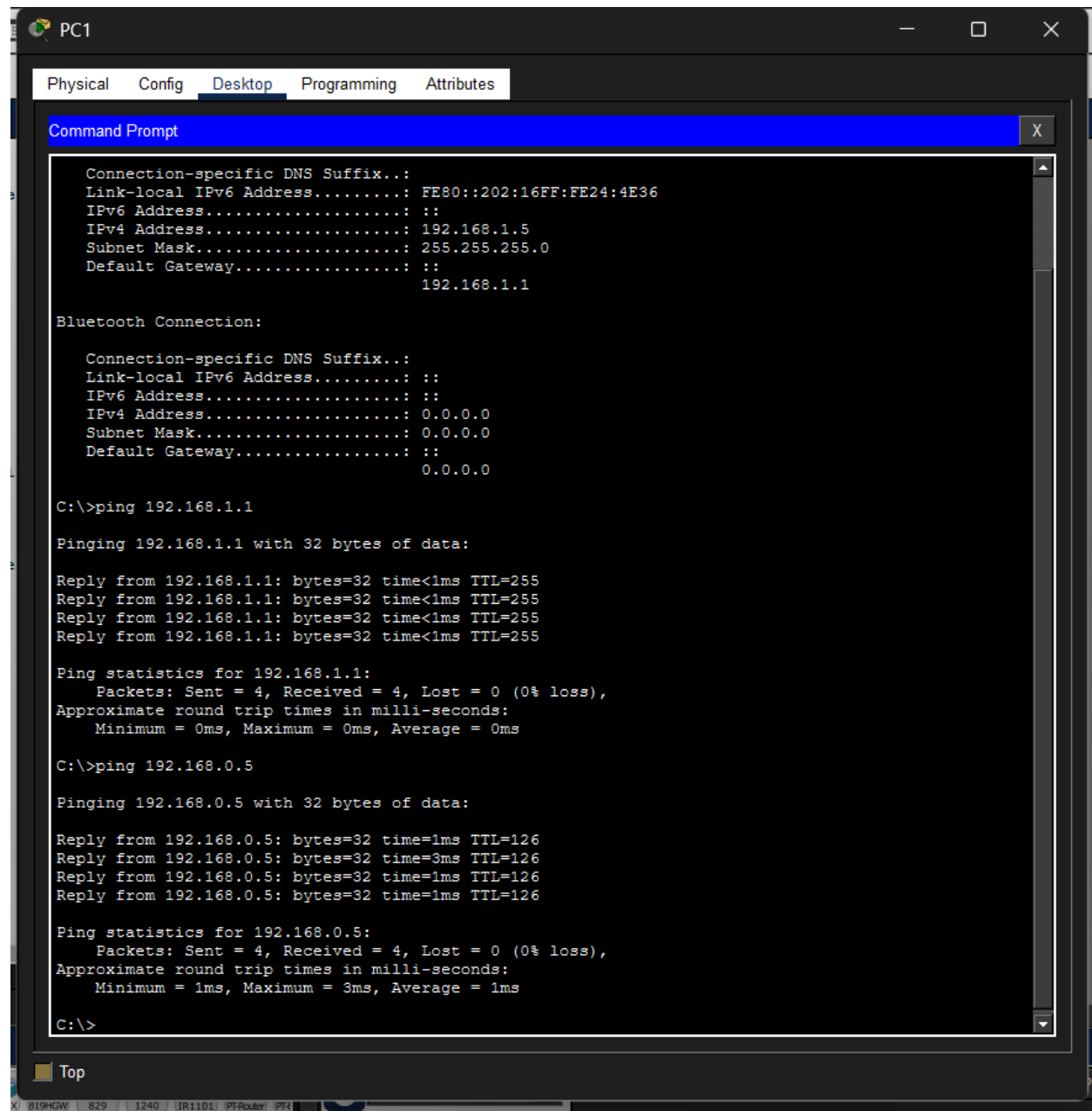
Reply from 192.168.1.5: bytes=32 time=1ms TTL=126
Reply from 192.168.1.5: bytes=32 time=1ms TTL=126
Reply from 192.168.1.5: bytes=32 time=3ms TTL=126
Reply from 192.168.1.5: bytes=32 time=20ms TTL=126

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 20ms, Average = 6ms

C:\>
```

At the bottom of the Command Prompt window, there is a 'Top' button. The taskbar at the very bottom shows the system clock as 12:40 and the date as 10/11/2017.

From PC1 ping PC0:



The screenshot shows a configuration window for PC1 with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying a Command Prompt window. The Command Prompt shows the IP configuration for PC1, including a link-local IPv6 address, a regular IPv6 address, and an IPv4 address of 192.168.1.5. It also shows the results of two ping commands: one to 192.168.1.1 (successful) and one to 192.168.0.5 (successful).

```
PC1
Physical Config Desktop Programming Attributes
Command Prompt
Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: FE80::202:16FF:FE24:4E36
IPv6 Address.....: ::
IPv4 Address.....: 192.168.1.5
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
                        192.168.1.1

Bluetooth Connection:

Connection-specific DNS Suffix...:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
                        0.0.0.0

C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.0.5

Pinging 192.168.0.5 with 32 bytes of data:

Reply from 192.168.0.5: bytes=32 time=1ms TTL=126
Reply from 192.168.0.5: bytes=32 time=3ms TTL=126
Reply from 192.168.0.5: bytes=32 time=1ms TTL=126
Reply from 192.168.0.5: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 3ms, Average = 1ms

C:\>
```

Top

819HGW 829 1240 IIR1101 PT-Router PT4

100% Completion of pka:

Cisco Packet Tracer - CAD-Link\Downloads\Static Network Route ExitIF.pka - Guest - 2025-11-01 16:52:39

File Edit Options View Tools Extensions Window Help

Logical Physical x 18, y 325

Root 18:23:00

Overall Aim
Add a static network route to R1 and another to R2 using exit interfaces.
Verify that PC0 and PC1 can ping each other.

Already Configured for you
=====

Basic configuration with the usual credentials
student / cisco123
secret password cisco0

Host static IP address and their default gateway
Router interfaces

Task 1
=====

Verify that PC0 cannot ping PC1 without the routes but they can ping their gate

Task 2
=====

Add the required route on the relevant router.
Verify that it is using the exit interface with the 'show ip route' command.
Verify that PC0 and PC1 can ping each other.

Addressing Information
=====

Device	Interface	IP Address
PC0	Fa0	192.168.0.5/24
PC1	Fa0	192.168.1.5/24
R1	Se0/0/0	192.168.0.1/24
	Se0/0/1	10.1.0.1/30
R2	Se0/0/0	192.168.1.1/24
	Se0/0/1	10.1.0.2/30

Time Elapsed: 00:42:30 Completion: 100%

☒ Dock ☐ Check Results

Time: 00:41:48

```
graph LR
    PC0[PC0  
192.168.0.5/24] --- R1[R1  
192.168.0.1/24]
    R1 --- R2[R2  
192.168.1.1/24]
    R2 --- PC1[PC1  
192.168.1.5/24]
```