

777888

## Packet Tracer - Verify IPv4 and IPv6 Addressing

### Addressing Table

Device	Interface	IP Address / Prefix		Default Gateway
R1	G0/0	10.10.1.97	255.255.255.224	N/A
		2001:db8:1:1::1/64		
	S0/0/1	10.10.1.6	255.255.255.252	N/A
		2001:db8:1:2::2/64		
		fe80::1		
R2	S0/0/0	10.10.1.5	255.255.255.252	N/A
		2001:db8:1:2::1/64		
	S0/0/1	10.10.1.9	255.255.255.252	N/A
		2001:db8:1:3::1/64		
		fe80::2		
R3	G0/0	10.10.1.17	255.255.255.240	N/A
		2001:db8:1:4::1/64		
	S0/0/1	10.10.1.10	255.255.255.252	N/A
		2001:db8:1:3::2/64		
		fe80::3		
PC1	NIC	10.10.1.100	255.255.255.224	10.10.1.97
		2001:DB8:1:1::A		FE80::1
PC2	NIC	10.10.1.20	255.255.255.240	10.10.1.17
		2001:DB8:1:4::A		FE80::3

### Objectives

**Part 1: Complete the Addressing Table Documentation**

**Part 2: Test Connectivity Using Ping**

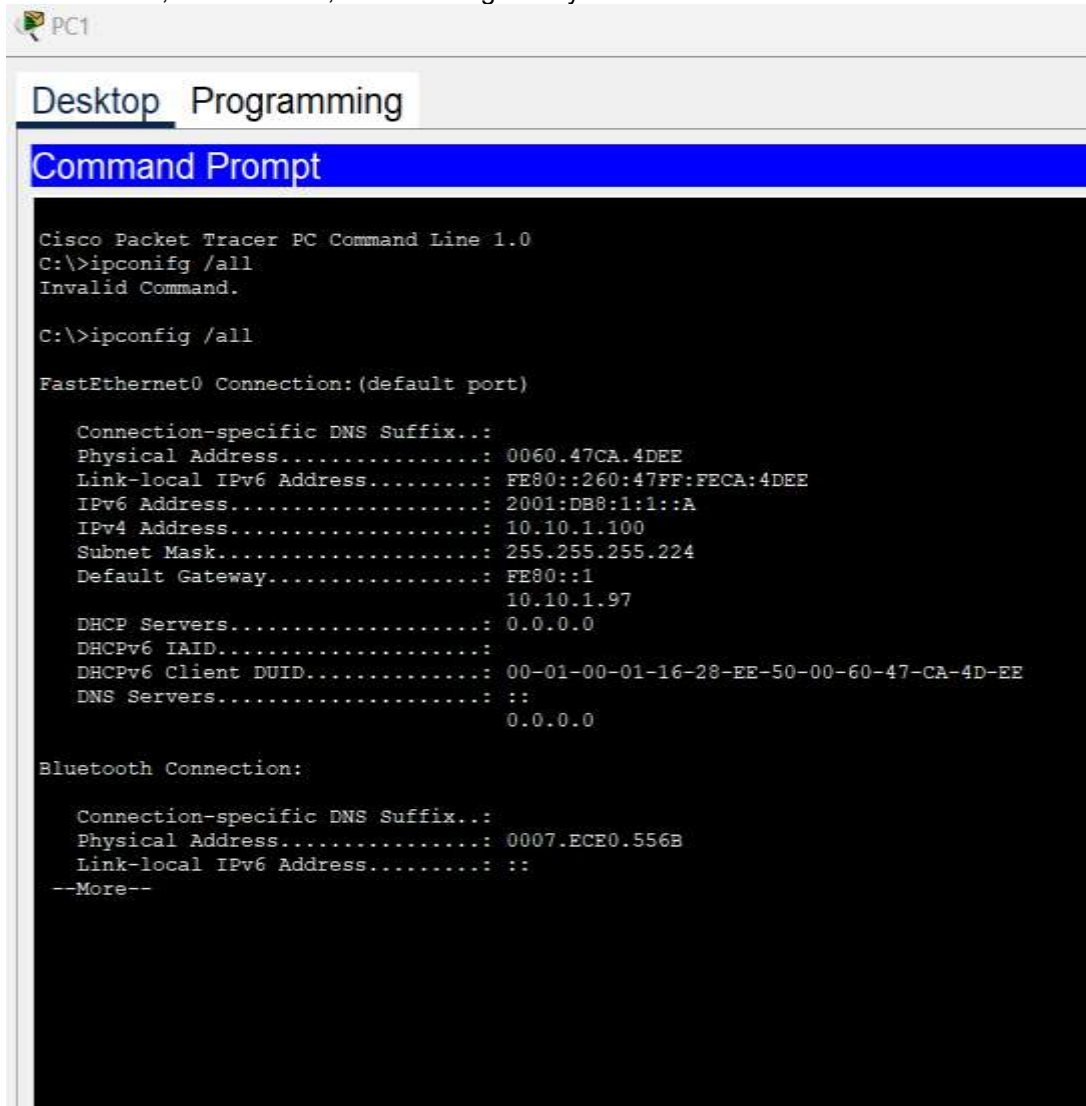
**Part 3: Discover the Path by Tracing the Route**

## Background

Dual-stack allows IPv4 and IPv6 to coexist on the same network. In this activity, you will investigate a dual-stack implementation including documenting the IPv4 and IPv6 configuration for end devices, testing connectivity for both IPv4 and IPv6 using **ping**, and tracing the path from end to end for IPv4 and IPv6. Complete the Addressing Table Documentation

### Step 1: Use ipconfig to verify IPv4 addressing.

- Click **PC1** and open the **Command Prompt**.
- Enter the **ipconfig /all** command to collect the IPv4 information. Fill-in the **Addressing Table** with the IPv4 address, subnet mask, and default gateway.



```

Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig /all
Invalid Command.

C:\>ipconfig /all

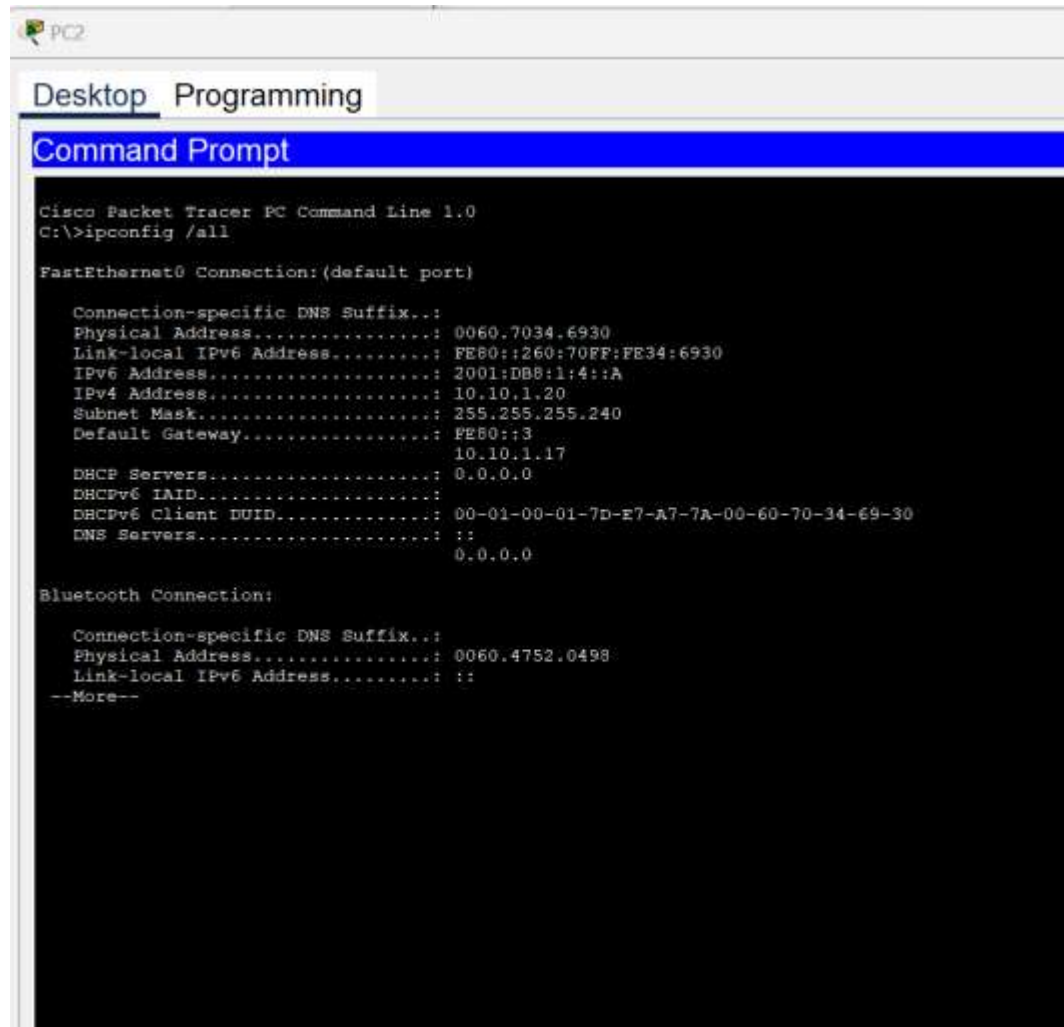
FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Physical Address.....: 0060.47CA.4DEE
    Link-local IPv6 Address.....: FE80::260:47FF:FECA:4DEE
    IPv6 Address.....: 2001:DB8:1:1::A
    IPv4 Address.....: 10.10.1.100
    Subnet Mask.....: 255.255.255.224
    Default Gateway.....: FE80::1
                        10.10.1.97
    DHCP Servers.....: 0.0.0.0
    DHCPv6 IAID.....:
    DHCPv6 Client DUID.....: 00-01-00-01-16-28-EE-50-00-60-47-CA-4D-EE
    DNS Servers.....: ::
                        0.0.0.0

Bluetooth Connection:

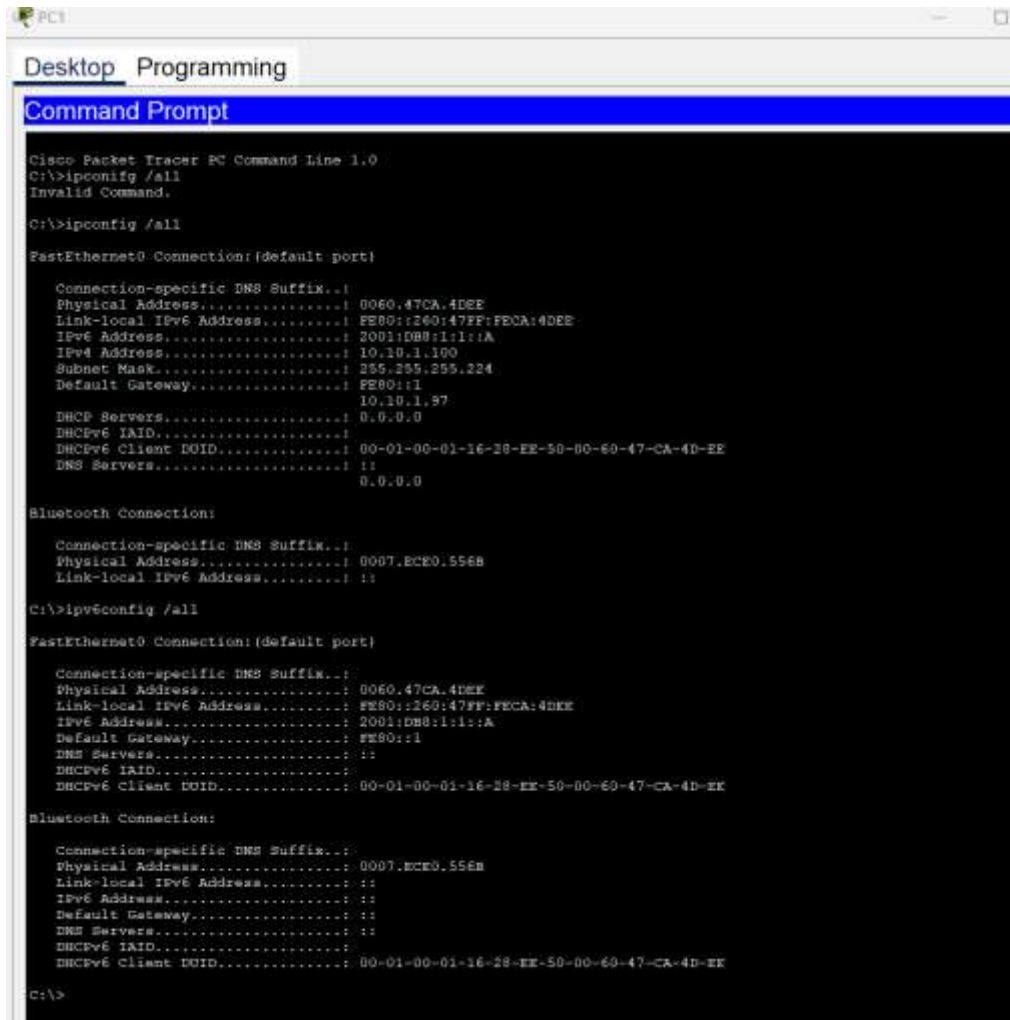
    Connection-specific DNS Suffix...:
    Physical Address.....: 0007.ECE0.556B
    Link-local IPv6 Address.....: ::
    --More--
  
```

- Click **PC2** and open the **Command Prompt**.
- Enter the **ipconfig /all** command to collect the IPv4 information. Fill-in the **Addressing Table** with the IPv4 address, subnet mask, and default gateway.



### Step 2: Use `ipv6config` to verify IPv6 addressing.

- On **PC1**, enter the `ipv6config /all` command to collect the IPv6 information. Fill-in the **Addressing Table** with the IPv6 address, subnet prefix, and default gateway.



The screenshot shows the Command Prompt window for PC1 in Cisco Packet Tracer. The window title is "PC1" and the tabs are "Desktop" and "Programming". The Command Prompt shows the following commands and output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig /all
Invalid Command.

C:\>ipconfig /all

FastEthernet0 Connection: (default port)

    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 0060.47CA.4DEE
    Link-local IPv6 Address . . . . .: FE80::260:47FF:FECA:4DEE
    IPv6 Address. . . . .: 2001:DB8:1:1::A
    IPv4 Address. . . . .: 10.10.1.100
    Subnet Mask. . . . .: 255.255.255.224
    Default Gateway. . . . .: FE80::1
                           10.10.1.97
    DHCP Servers. . . . .: 0.0.0.0
    DHCPv6 IAID. . . . .: 
    DHCPv6 Client DUID. . . . .: 00-01-00-01-16-28-EE-50-00-60-47-CA-4D-EE
    DNS Servers. . . . .: 
                           0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 0007.ECE0.55E8
    Link-local IPv6 Address . . . . .: 

C:\>ipconfig /all

FastEthernet0 Connection: (default port)

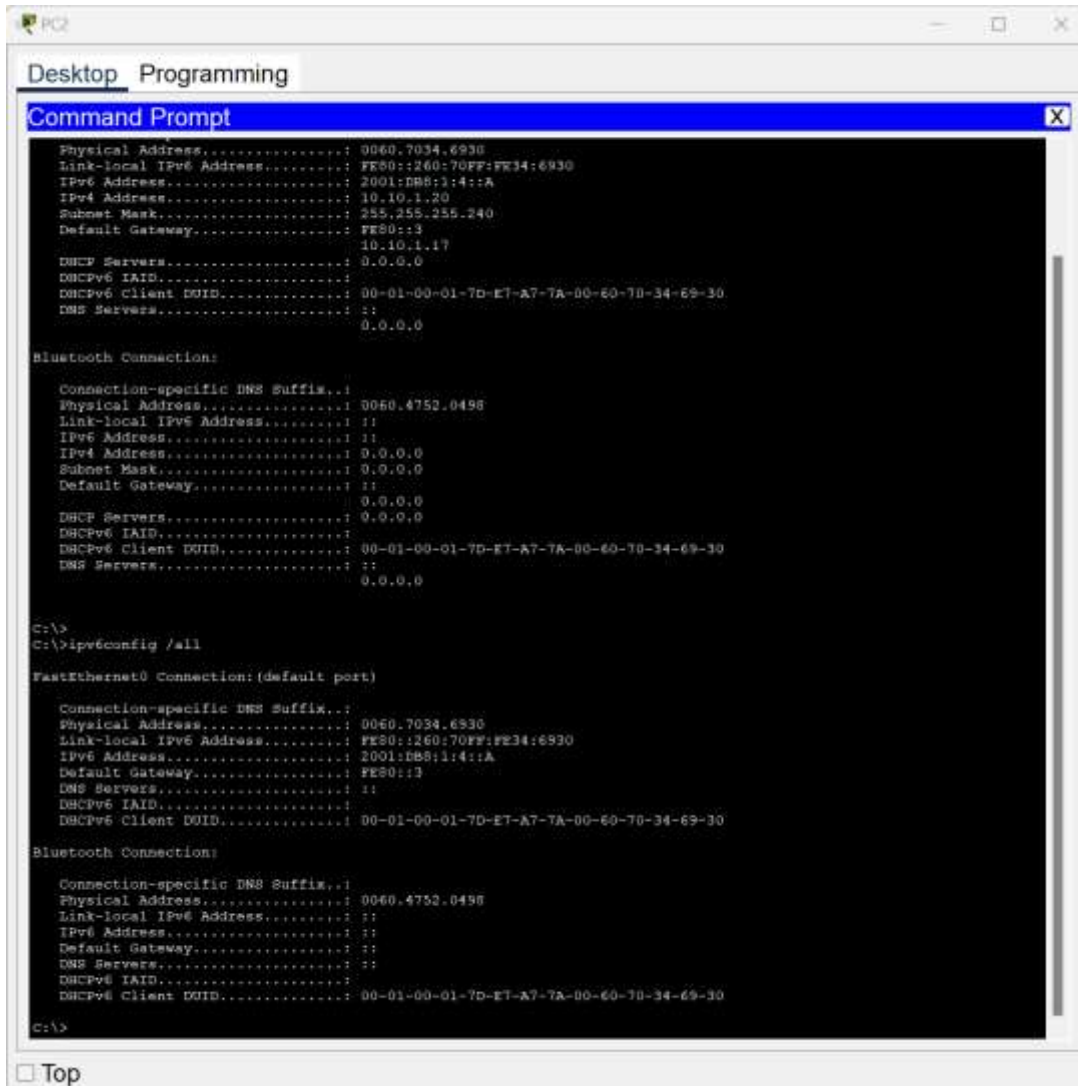
    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 0060.47CA.4DEE
    Link-local IPv6 Address . . . . .: FE80::260:47FF:FECA:4DEE
    IPv6 Address. . . . .: 2001:DB8:1:1::A
    Default Gateway. . . . .: FE80::1
    DNS Servers. . . . .: 
    DHCPv6 IAID. . . . .: 
    DHCPv6 Client DUID. . . . .: 00-01-00-01-16-28-EE-50-00-60-47-CA-4D-EE

Bluetooth Connection:

    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 0007.ECE0.55E8
    Link-local IPv6 Address . . . . .: 
    IPv6 Address. . . . .: 
    Default Gateway. . . . .: 
    DNS Servers. . . . .: 
    DHCPv6 IAID. . . . .: 
    DHCPv6 Client DUID. . . . .: 00-01-00-01-16-28-EE-50-00-60-47-CA-4D-EE

C:\>
```

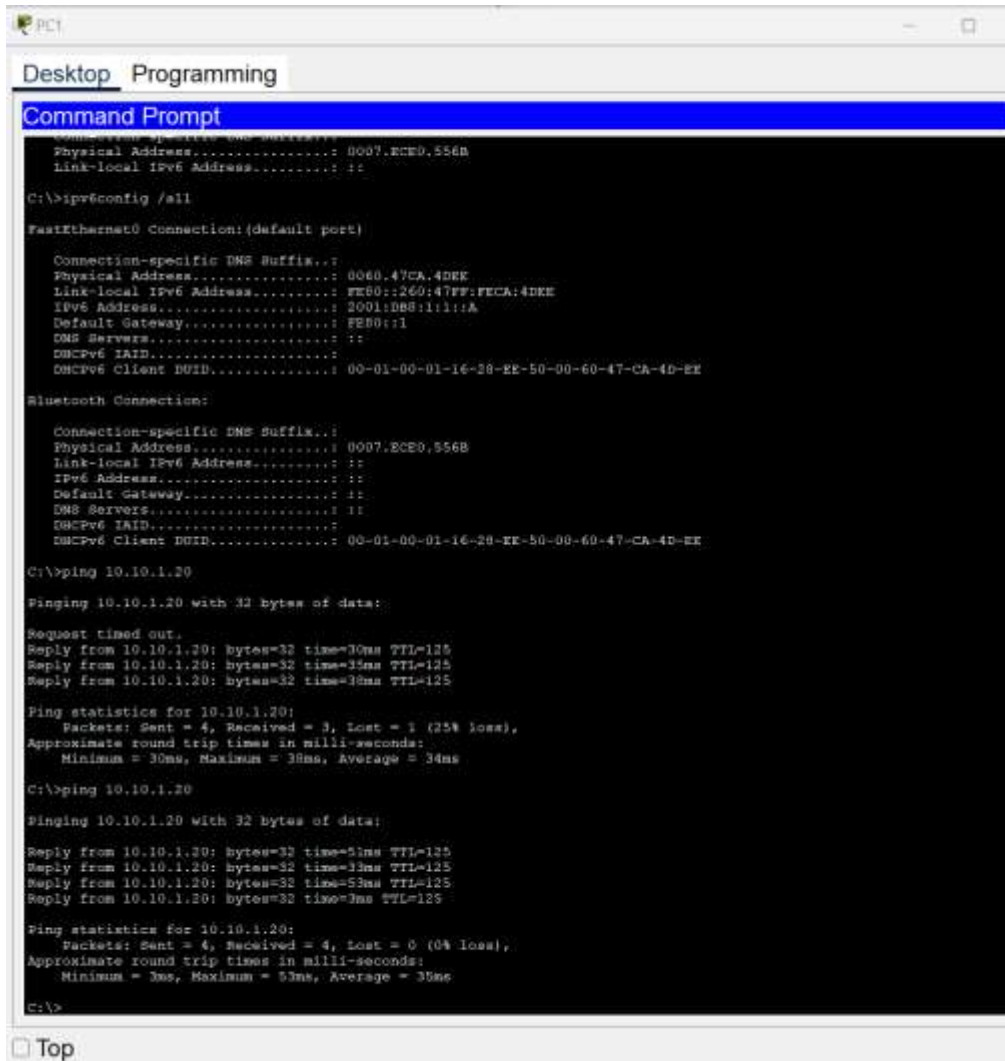
- b. On **PC2**, enter the **ipconfig /all** command to collect the IPv6 information. Fill-in the **Addressing Table** with the IPv6 address, subnet prefix, and default gateway.



## Part 2: Test Connectivity Using Ping

### Step 1: Use ping to verify IPv4 connectivity.

- From **PC1**, ping the IPv4 address for **PC2**.



```
PC1
Desktop  Programming
Command Prompt
C:\>ipconfig /all

Physical Address. . . . . : 0007.ECE0.556B
Link-local IPv6 Address . . . . . : ::

C:\>ipconfig /all

FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix. : 
    Physical Address. . . . . : 0060.47CA.4DEE
    Link-local IPv6 Address . . . . . : FE80::260:47FF:FECA:4DEE
    IPv6 Address. . . . . : 2001:DB8:1:1::A
    Default Gateway. . . . . : FE80::1
    DNS Servers. . . . . : 
    DHCPv6 IAID. . . . . : 
    DHCPv6 Client DUID. . . . . : 00-01-00-01-16-28-FE-50-00-60-47-CA-4D-EE

Bluetooth Connection:

    Connection-specific DNS Suffix. : 
    Physical Address. . . . . : 0007.ECE0.556B
    Link-local IPv6 Address . . . . . : ::
    IPv6 Address. . . . . : 
    Default Gateway. . . . . : 
    DNS Servers. . . . . : 
    DHCPv6 IAID. . . . . : 
    DHCPv6 Client DUID. . . . . : 00-01-00-01-16-28-FE-50-00-60-47-CA-4D-EE

C:\>ping 10.10.1.20

Pinging 10.10.1.20 with 32 bytes of data:

Request timed out.
Reply from 10.10.1.20: bytes=32 time=30ms TTL=125
Reply from 10.10.1.20: bytes=32 time=35ms TTL=125
Reply from 10.10.1.20: bytes=32 time=38ms TTL=125

Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 30ms, Maximum = 38ms, Average = 34ms

C:\>ping 10.10.1.20

Pinging 10.10.1.20 with 32 bytes of data:

Reply from 10.10.1.20: bytes=32 time=53ms TTL=125
Reply from 10.10.1.20: bytes=32 time=53ms TTL=125
Reply from 10.10.1.20: bytes=32 time=53ms TTL=125
Reply from 10.10.1.20: bytes=32 time=3ms TTL=125

Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 53ms, Average = 35ms

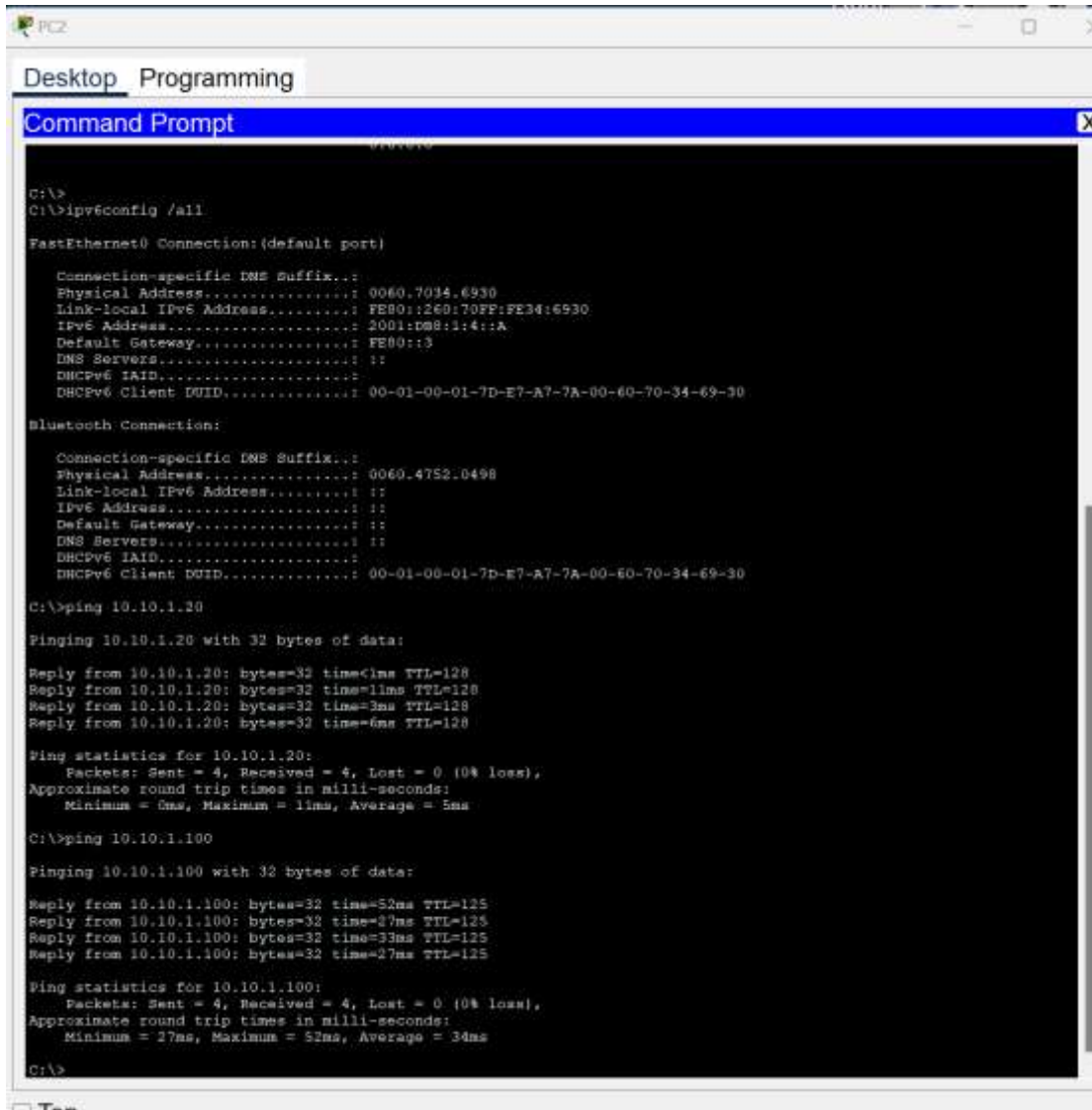
C:\>
```

☐ Top

Was the result successful?

Yes, it was successful.

- b. From **PC2**, ping the IPv4 address for **PC1**.



```
PC2
Desktop  Programming
Command Prompt

C:\>
C:\>ipv6config /all

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...: 0060.7034.6930
Physical Address.....: 0060.7034.6930
Link-local IPv6 Address.....: FE80::260:70FF:FE34:6930
IPv6 Address.....: 2001:DB8:1:4::A
Default Gateway.....: FE00::3
DNS Servers.....: ::
DHCPv6 IAID.....:
DHCPv6 Client DUID.....: 00-01-00-01-7D-E7-A7-7A-00-60-70-34-69-30

Bluetooth Connection:

Connection-specific DNS Suffix...: 0060.4752.0498
Physical Address.....: 0060.4752.0498
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
Default Gateway.....: ::
DNS Servers.....: ::
DHCPv6 IAID.....:
DHCPv6 Client DUID.....: 00-01-00-01-7D-E7-A7-7A-00-60-70-34-69-30

C:\>ping 10.10.1.20

Pinging 10.10.1.20 with 32 bytes of data:

Reply from 10.10.1.20: bytes=32 time<1ms TTL=128
Reply from 10.10.1.20: bytes=32 time=11ms TTL=128
Reply from 10.10.1.20: bytes=32 time=3ms TTL=128
Reply from 10.10.1.20: bytes=32 time=6ms TTL=128

Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 11ms, Average = 5ms

C:\>ping 10.10.1.100

Pinging 10.10.1.100 with 32 bytes of data:

Reply from 10.10.1.100: bytes=32 time=52ms TTL=125
Reply from 10.10.1.100: bytes=32 time=37ms TTL=125
Reply from 10.10.1.100: bytes=32 time=33ms TTL=125
Reply from 10.10.1.100: bytes=32 time=27ms TTL=125

Ping statistics for 10.10.1.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 27ms, Maximum = 52ms, Average = 34ms

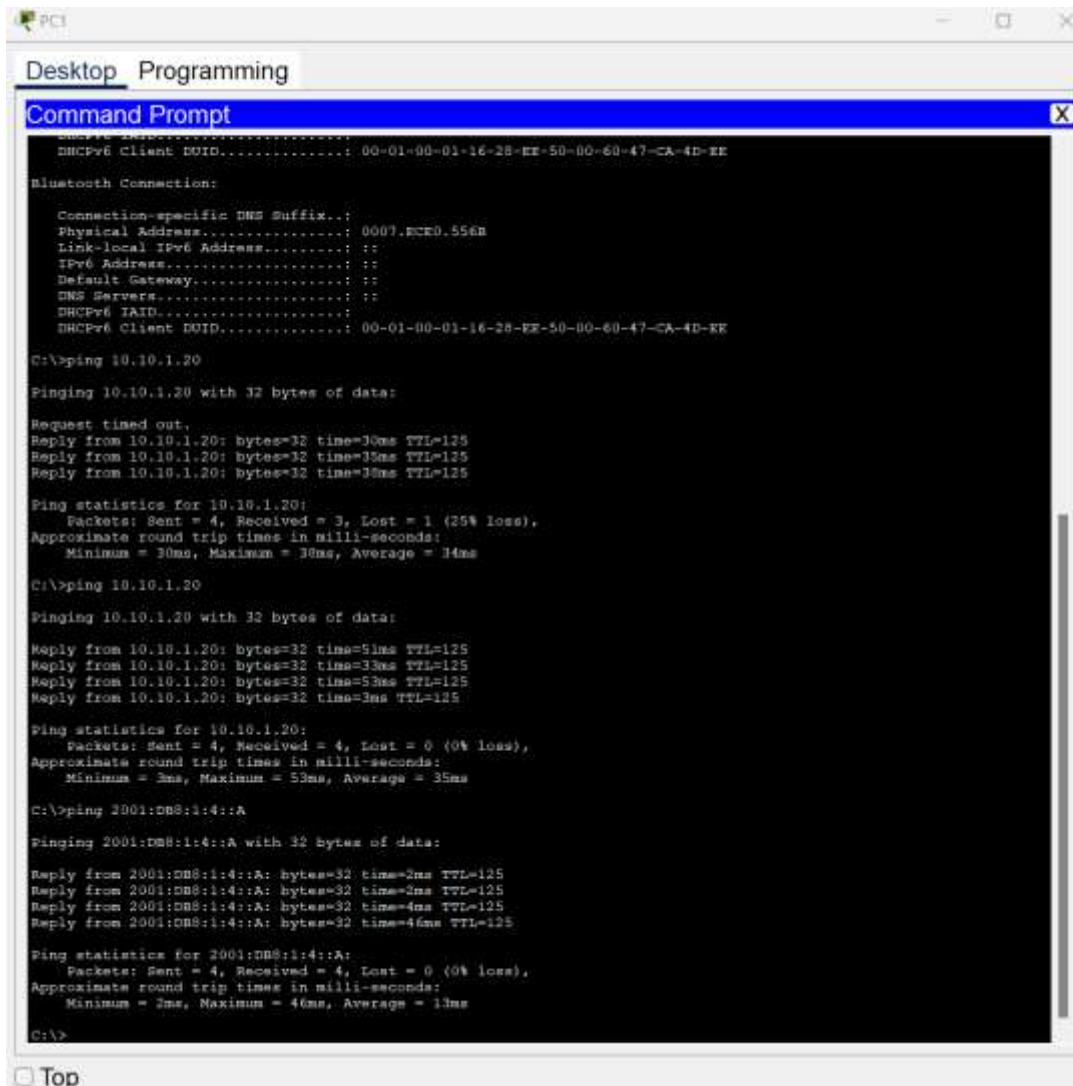
C:\>
```

Was the result successful?

Yes, it was successful.

### Step 2: Use ping to verify IPv6 connectivity.

- a. From **PC1**, ping the IPv6 address for **PC2**.



The screenshot shows a Packet Tracer PC1 desktop environment. A Command Prompt window is open, displaying the following text:

```
Desktop Programming
Command Prompt
DHCPv6 Client DUID..... 00-01-00-01-16-28-EE-50-00-60-47-CA-4D-EE

Bluetooth Connection:
Connection-specific DNS Suffix... : 0007.FEED.556a
Physical Address..... : 0007.FEED.556a
Link-local IPv6 Address..... : ::
IPv6 Address..... : ::
Default Gateway..... : ::
DNS Servers..... : ::
DHCPv6 IAID..... : ::
DHCPv6 Client DUID..... : 00-01-00-01-16-28-EE-50-00-60-47-CA-4D-EE

C:\>ping 10.10.1.20

Pinging 10.10.1.20 with 32 bytes of data:

Request timed out.
Reply from 10.10.1.20: bytes=32 time=30ms TTL=125
Reply from 10.10.1.20: bytes=32 time=33ms TTL=125
Reply from 10.10.1.20: bytes=32 time=38ms TTL=125

Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 30ms, Maximum = 38ms, Average = 34ms

C:\>ping 10.10.1.20

Pinging 10.10.1.20 with 32 bytes of data:

Reply from 10.10.1.20: bytes=32 time=51ms TTL=125
Reply from 10.10.1.20: bytes=32 time=33ms TTL=125
Reply from 10.10.1.20: bytes=32 time=53ms TTL=125
Reply from 10.10.1.20: bytes=32 time=3ms TTL=125

Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 53ms, Average = 35ms

C:\>ping 2001:DB8:1:4::A

Pinging 2001:DB8:1:4::A with 32 bytes of data:

Reply from 2001:DB8:1:4::A: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:4::A: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:4::A: bytes=32 time=4ms TTL=125
Reply from 2001:DB8:1:4::A: bytes=32 time=46ms TTL=125

Ping statistics for 2001:DB8:1:4::A:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 46ms, Average = 13ms

C:\>
```

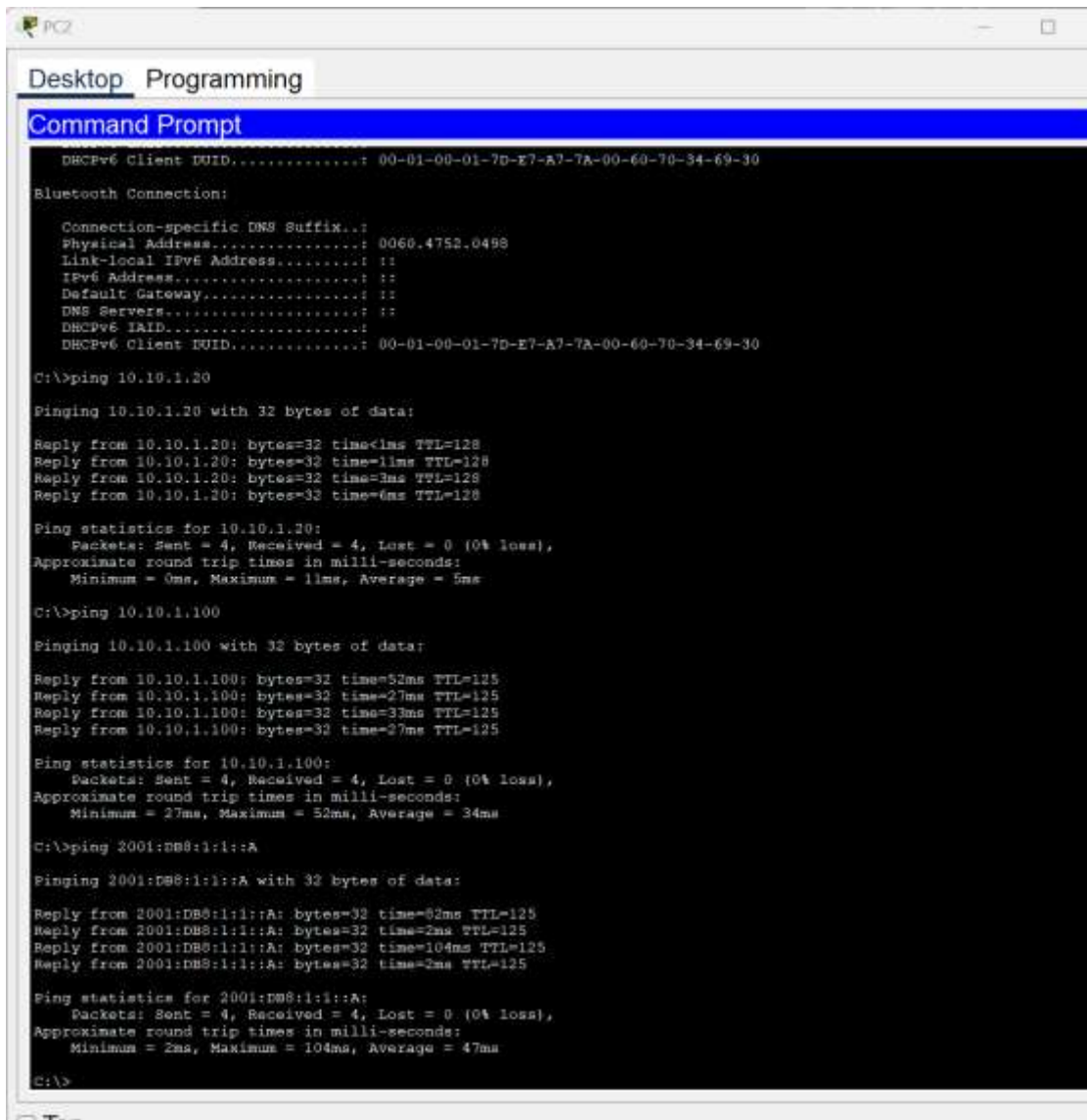
At the bottom of the Command Prompt window, there is a "Top" button.

Was the result successful?

Yes, it was successful.

From **PC2**, ping the IPv6 address of **PC1**.





```
PC2
Desktop Programming
Command Prompt
DHCPv6 Client DUID.....: 00-01-00-01-7D-E7-A7-7A-00-60-70-34-69-30

Bluetooth Connection:

Connection-specific DNS Suffix...:
Physical Address.....: 0060.4752.0498
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
Default Gateway.....: ::
DNS Servers.....: ::
DHCPv6 IAID.....:
DHCPv6 Client DUID.....: 00-01-00-01-7D-E7-A7-7A-00-60-70-34-69-30

C:\>ping 10.10.1.20

Pinging 10.10.1.20 with 32 bytes of data:

Reply from 10.10.1.20: bytes=32 time<1ms TTL=128
Reply from 10.10.1.20: bytes=32 time=1ms TTL=128
Reply from 10.10.1.20: bytes=32 time=3ms TTL=128
Reply from 10.10.1.20: bytes=32 time=6ms TTL=128

Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 5ms

C:\>ping 10.10.1.100

Pinging 10.10.1.100 with 32 bytes of data:

Reply from 10.10.1.100: bytes=32 time=52ms TTL=125
Reply from 10.10.1.100: bytes=32 time=27ms TTL=125
Reply from 10.10.1.100: bytes=32 time=33ms TTL=125
Reply from 10.10.1.100: bytes=32 time=27ms TTL=125

Ping statistics for 10.10.1.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 27ms, Maximum = 52ms, Average = 34ms

C:\>ping 2001:DB8:1:1::A

Pinging 2001:DB8:1:1::A with 32 bytes of data:

Reply from 2001:DB8:1:1::A: bytes=32 time=62ms TTL=125
Reply from 2001:DB8:1:1::A: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:1::A: bytes=32 time=104ms TTL=125
Reply from 2001:DB8:1:1::A: bytes=32 time=2ms TTL=125

Ping statistics for 2001:DB8:1:1::A:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 104ms, Average = 47ms

C:\>
```

Was the result successful?

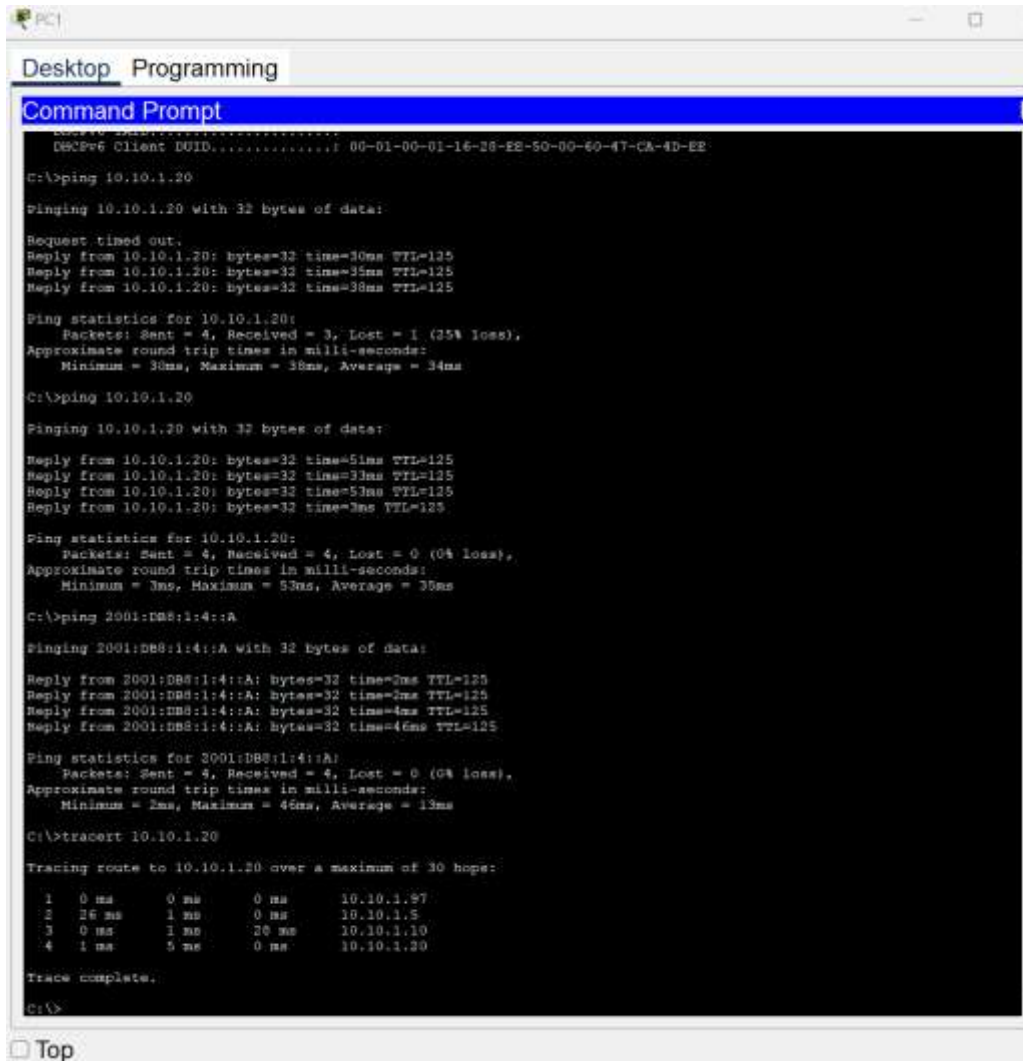
Yes, it was successful.

## Part 3: Discover the Path by Tracing the Route

### Step 1: Use tracert to discover the IPv4 path.

- From PC1, trace the route to PC2.

```
PC> tracert 10.10.1.20
```



```
PC1
Desktop  Programming
Command Prompt
DHCPv6 Client DUID.....: 00-01-00-01-16-28-EE-50-00-00-47-CA-4D-EE

C:\>ping 10.10.1.20

Pinging 10.10.1.20 with 32 bytes of data:

Request timed out.
Reply from 10.10.1.20: bytes=32 time=30ms TTL=125
Reply from 10.10.1.20: bytes=32 time=35ms TTL=125
Reply from 10.10.1.20: bytes=32 time=38ms TTL=125

Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 30ms, Maximum = 38ms, Average = 34ms

C:\>ping 10.10.1.20

Pinging 10.10.1.20 with 32 bytes of data:

Reply from 10.10.1.20: bytes=32 time=51ms TTL=125
Reply from 10.10.1.20: bytes=32 time=33ms TTL=125
Reply from 10.10.1.20: bytes=32 time=53ms TTL=125
Reply from 10.10.1.20: bytes=32 time=3ms TTL=125

Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 53ms, Average = 36ms

C:\>ping 2001:DB8:1:4::A

Pinging 2001:DB8:1:4::A with 32 bytes of data:

Reply from 2001:DB8:1:4::A: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:4::A: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:4::A: bytes=32 time=4ms TTL=125
Reply from 2001:DB8:1:4::A: bytes=32 time=46ms TTL=125

Ping statistics for 2001:DB8:1:4::A:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 46ms, Average = 13ms

C:\>tracert 10.10.1.20

Tracing route to 10.10.1.20 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    10.10.1.97
  1  26 ms   1 ms    0 ms    10.10.1.5
  2  0 ms    1 ms    20 ms   10.10.1.10
  3  1 ms    5 ms    0 ms    10.10.1.20

Trace complete.

C:\>
```

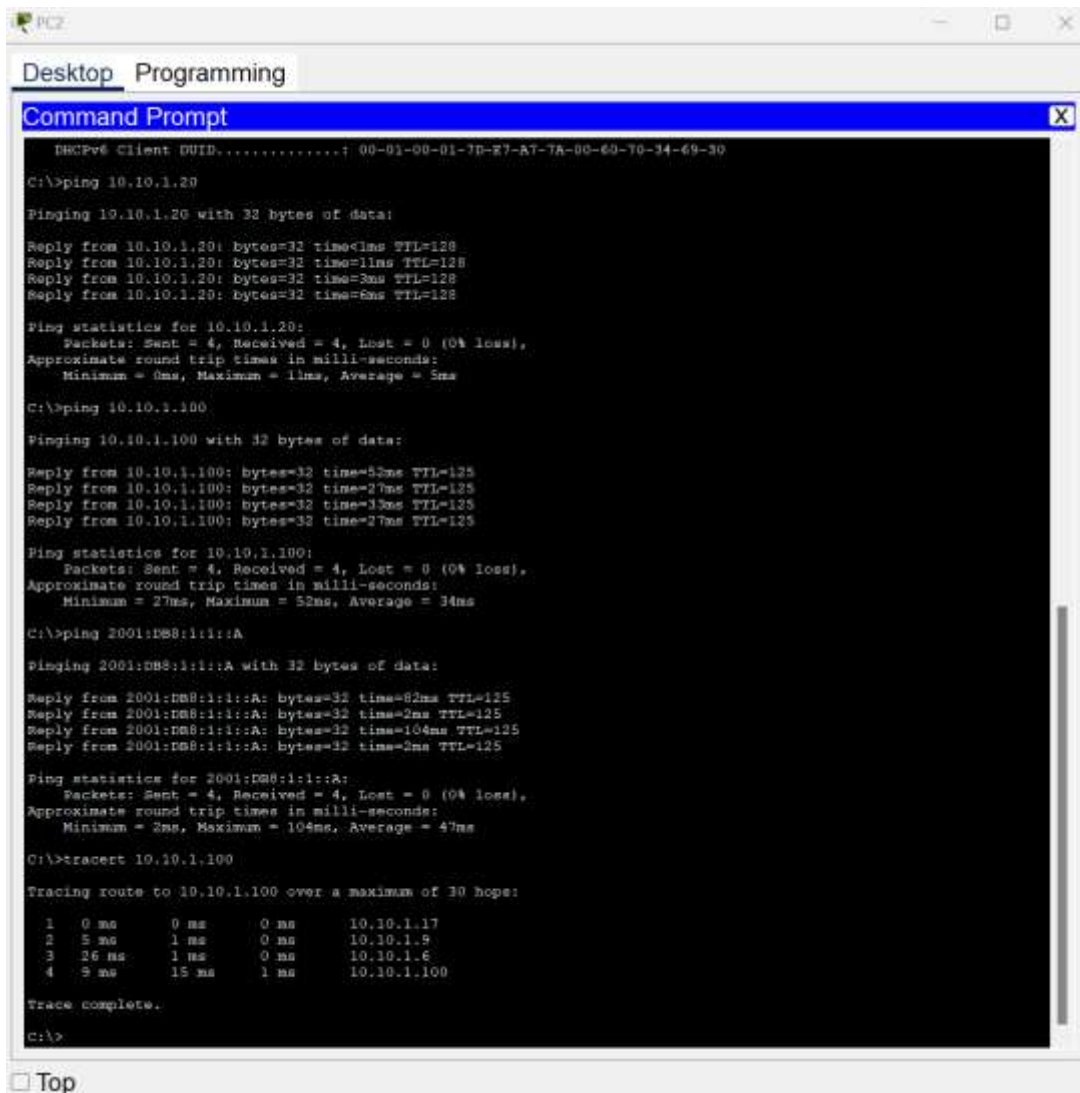
What addresses were encountered along the path?

10.10.1.97, 10.10.1.5, 10.10.1.10, & 10.10.1.20 were the addresses that were encountered.

With which interfaces are the four addresses associated

The interfaces associated with the addresses are GigabitEthernet0/0, Serial0/0/0, Serial0/0/1, and PC 2.

- b. From **PC2**, trace the route to **PC1**.



```
PC2
Desktop Programming
Command Prompt
DHCPv6 Client DUID.....: 00-01-00-01-7D-E7-A7-TA-00-60-T0-34-69-30

C:\>ping 10.10.1.20

Pinging 10.10.1.20 with 32 bytes of data:

Reply from 10.10.1.20: bytes=32 time<1ms TTL=128
Reply from 10.10.1.20: bytes=32 time=11ms TTL=128
Reply from 10.10.1.20: bytes=32 time=3ms TTL=128
Reply from 10.10.1.20: bytes=32 time=6ms TTL=128

Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 11ms, Average = 5ms

C:\>ping 10.10.1.100

Pinging 10.10.1.100 with 32 bytes of data:

Reply from 10.10.1.100: bytes=32 time=52ms TTL=125
Reply from 10.10.1.100: bytes=32 time=27ms TTL=125
Reply from 10.10.1.100: bytes=32 time=13ms TTL=125
Reply from 10.10.1.100: bytes=32 time=27ms TTL=125

Ping statistics for 10.10.1.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 27ms, Maximum = 52ms, Average = 34ms

C:\>ping 2001:db8:1:1::a

Pinging 2001:db8:1:1::a with 32 bytes of data:

Reply from 2001:db8:1:1::a: bytes=32 time=62ms TTL=125
Reply from 2001:db8:1:1::a: bytes=32 time=2ms TTL=125
Reply from 2001:db8:1:1::a: bytes=32 time=104ms TTL=125
Reply from 2001:db8:1:1::a: bytes=32 time=2ms TTL=125

Ping statistics for 2001:db8:1:1::a:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 104ms, Average = 47ms

C:\>tracert 10.10.1.100

Tracing route to 10.10.1.100 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    10.10.1.17
  1  5 ms    1 ms    0 ms    10.10.1.9
  2  26 ms   1 ms    0 ms    10.10.1.6
  3  9 ms    15 ms   1 ms    10.10.1.100

Trace complete.

C:\>
```

What addresses were encountered along the path?

10.10.1.17, 10.10.1.9, 10.10.1.6, & 10.10.1.100 were the addresses that were encountered.

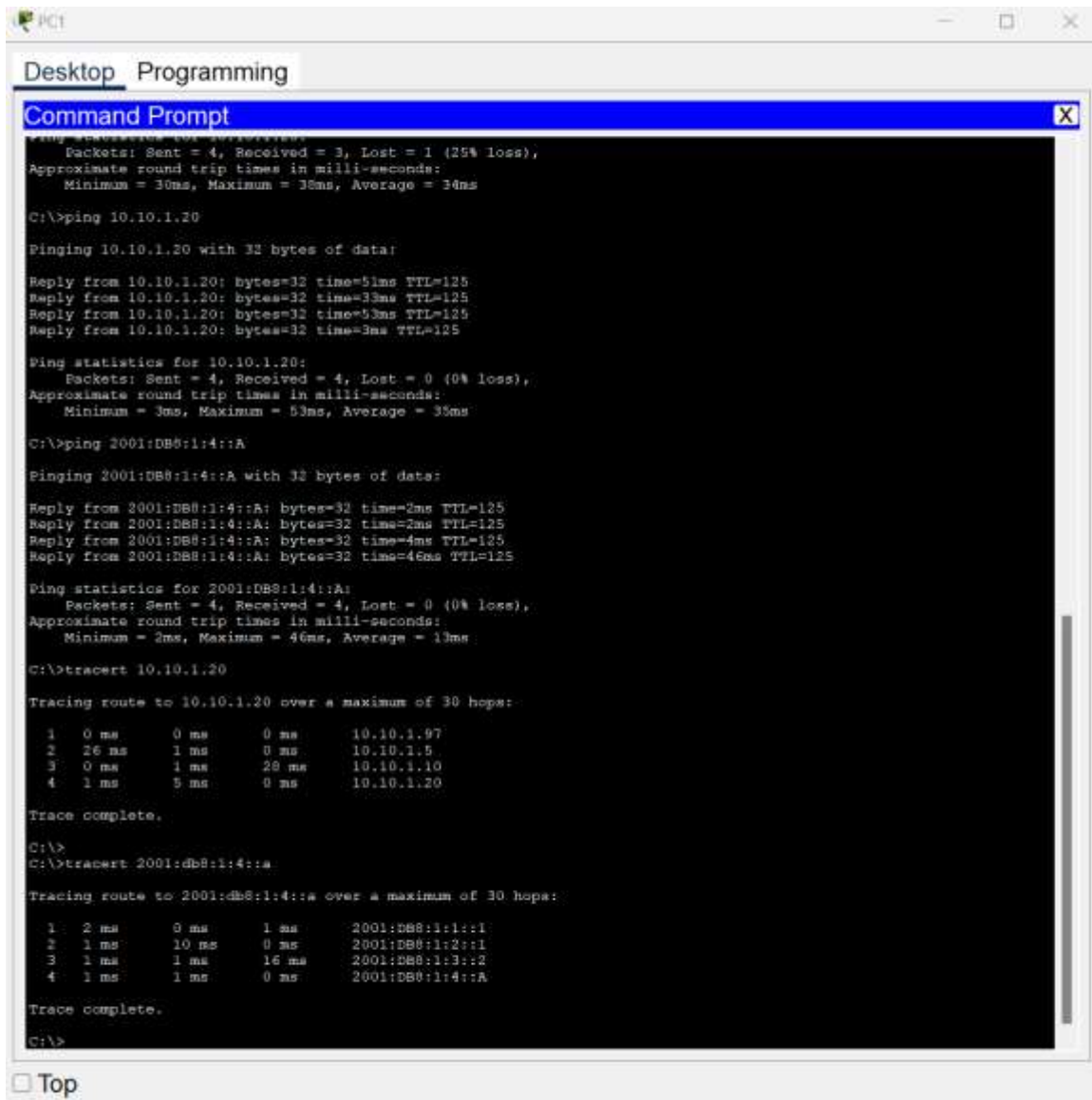
With which interfaces are the four addresses associated?

The interfaces associated with the addresses are GigabitEthernet0/0, Serial0/0/1, and PC 1.

### Step 2: Use tracer to discover the IPv6 path.

- From **PC1**, trace the route to the IPv6 address for **PC2**.

```
PC> tracert 2001:db8:1:4::a
```



```
PC1
Desktop  Programming
Command Prompt
Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 30ms, Maximum = 38ms, Average = 34ms

C:\>ping 10.10.1.20

Pinging 10.10.1.20 with 32 bytes of data:

Reply from 10.10.1.20: bytes=32 time=51ms TTL=125
Reply from 10.10.1.20: bytes=32 time=33ms TTL=125
Reply from 10.10.1.20: bytes=32 time=53ms TTL=125
Reply from 10.10.1.20: bytes=32 time=3ms TTL=125

Ping statistics for 10.10.1.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 53ms, Average = 35ms

C:\>ping 2001:DB8:1:4::A

Pinging 2001:DB8:1:4::A with 32 bytes of data:

Reply from 2001:DB8:1:4::A: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:4::A: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:4::A: bytes=32 time=4ms TTL=125
Reply from 2001:DB8:1:4::A: bytes=32 time=46ms TTL=125

Ping statistics for 2001:DB8:1:4::A:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 46ms, Average = 13ms

C:\>tracert 10.10.1.20

Tracing route to 10.10.1.20 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    10.10.1.97
  1  26 ms   1 ms    0 ms    10.10.1.5
  2  0 ms    1 ms    28 ms   10.10.1.10
  3  1 ms    5 ms    0 ms    10.10.1.20

Trace complete.

C:\>
C:\>tracert 2001:db8:1:4::a

Tracing route to 2001:db8:1:4::a over a maximum of 30 hops:

  0  2 ms     0 ms     1 ms     2001:DB8:1:1::1
  1  1 ms     10 ms    0 ms     2001:DB8:1:2::1
  2  1 ms     1 ms     16 ms    2001:DB8:1:3::2
  3  1 ms     1 ms     0 ms     2001:DB8:1:4::A

Trace complete.

C:\>
```

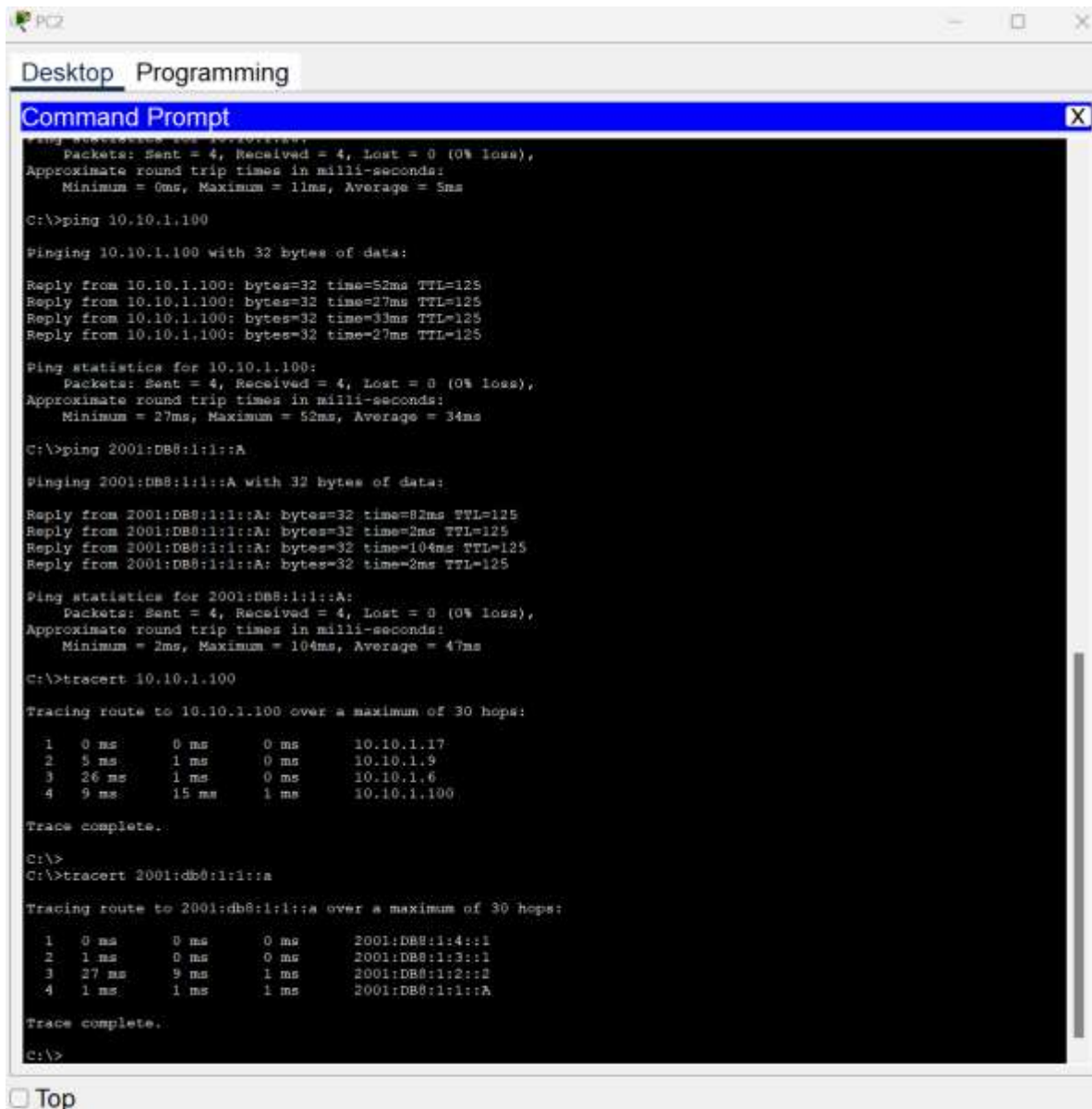
What addresses were encountered along the path?

2001:DB8:1:1::1, 2001:DB8:1:2::1, 2001:DB8:1:3::2, & 2001:DB8:1:4::A were the addresses that were encountered.

With which interfaces are the four addresses associated?

The interfaces associated with the addresses are GigabitEthernet0/0, Serial0/0/0, Serial0/0/1, and PC 2

- b. From **PC2**, trace the route to the IPv6 address for **PC1**.



```
PC2
Desktop  Programming
Command Prompt
ping statistics for 10.10.1.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 11ms, Average = 5ms

C:\>ping 10.10.1.100

Pinging 10.10.1.100 with 32 bytes of data:

Reply from 10.10.1.100: bytes=32 time=52ms TTL=125
Reply from 10.10.1.100: bytes=32 time=27ms TTL=125
Reply from 10.10.1.100: bytes=32 time=33ms TTL=125
Reply from 10.10.1.100: bytes=32 time=27ms TTL=125

Ping statistics for 10.10.1.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 27ms, Maximum = 52ms, Average = 34ms

C:\>ping 2001:DB8:1:1::A

Pinging 2001:DB8:1:1::A with 32 bytes of data:

Reply from 2001:DB8:1:1::A: bytes=32 time=82ms TTL=125
Reply from 2001:DB8:1:1::A: bytes=32 time=2ms TTL=125
Reply from 2001:DB8:1:1::A: bytes=32 time=104ms TTL=125
Reply from 2001:DB8:1:1::A: bytes=32 time=2ms TTL=125

Ping statistics for 2001:DB8:1:1::A:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 104ms, Average = 47ms

C:\>tracert 10.10.1.100

Tracing route to 10.10.1.100 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    10.10.1.17
  1  5 ms     1 ms    0 ms    10.10.1.9
  2  26 ms    1 ms    0 ms    10.10.1.6
  3  9 ms     15 ms   1 ms    10.10.1.100

Trace complete.

C:\>
C:\>tracert 2001:db8:1:1::a

Tracing route to 2001:db8:1:1::a over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    2001:DB8:1:4::1
  1  1 ms     0 ms    0 ms    2001:DB8:1:3::1
  2  27 ms    9 ms    1 ms    2001:DB8:1:2::2
  3  1 ms     1 ms    1 ms    2001:DB8:1:1::A

Trace complete.

C:\>
```

What addresses were encountered along the path?

2001:DB8:1:4::1, 2001:DB8:1:3::1, 2001:DB8:1:2::2, & 2001:DB8:1:1::A were the addresses that were encountered.

With which interfaces are the four addresses associated?

The interfaces associated with the addresses are GigabitEthernet0/0, Serial0/0/1, and PC 1