INTERNETWORKING ESSENTIALS CA1

BACHELOR OF TECHNOLOGY

IN

Computer Science & Engineering

By

LAVANYA PUPPALA

SECTION-K23UP

Roll no: 50

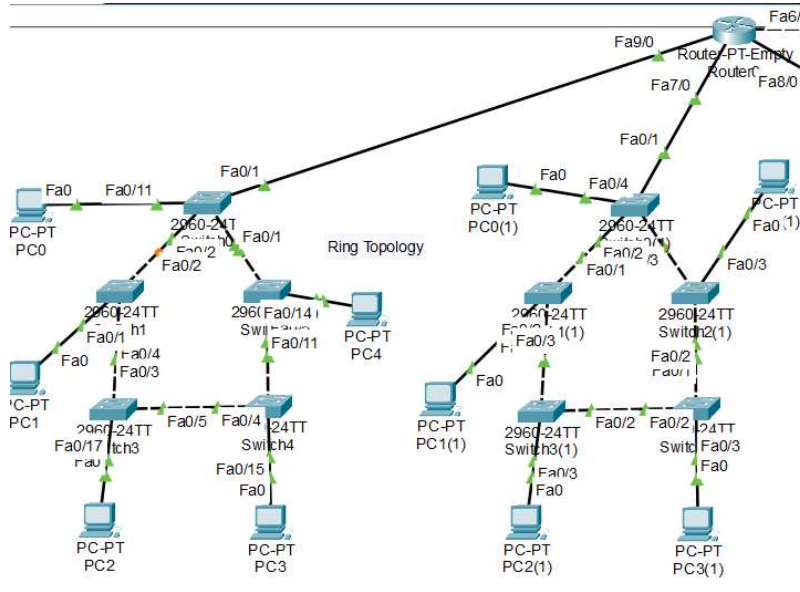Reg.No: 12300764

TO

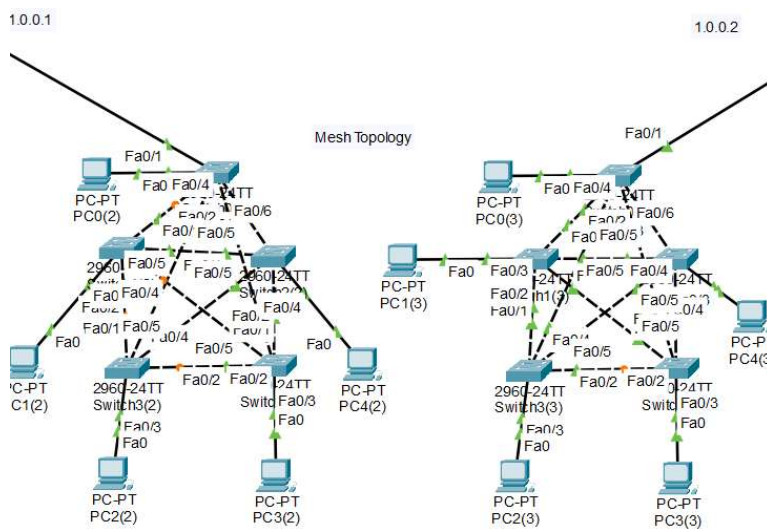**Mr. Simarjit Singh Malhi**

LOVELY PROFESSIONAL UNIVERSITY

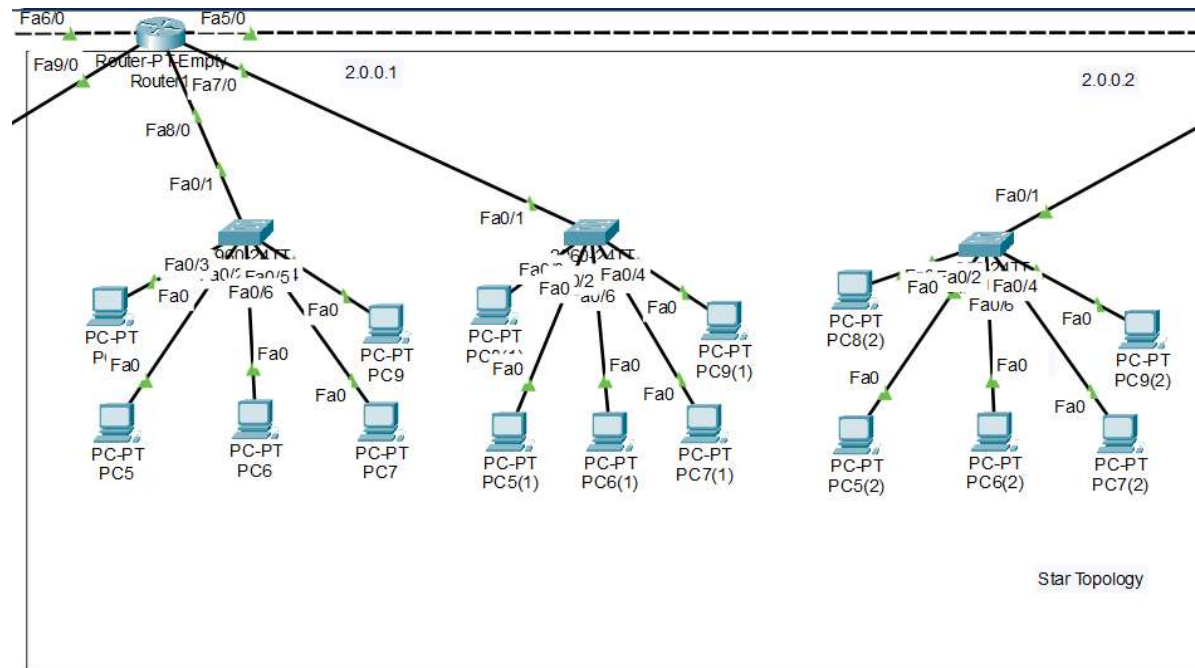**PUNJAB INDIA**

1. Physical Connection:

Ring Topology for first 2 floors:

IP address: 172.16.0.2 to 172.16.0.6
Subnet mask : 255.255.0.0
Default gateway: 172.16.0.1

IP address: 173.16.0.2 to 173.16.0.6
Subnet mask : 255.255.0.0
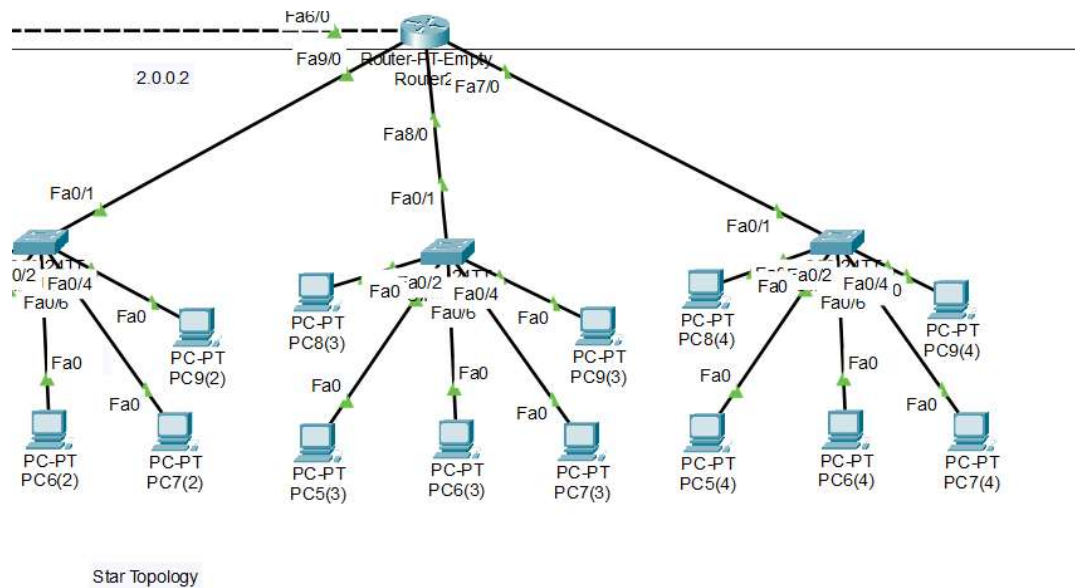Default gateway: 173.16.0.1

Mesh Topology for next 2 floors:

IP address: 174.16.0.2 to 174.16.0.6
Subnet mask : 255.255.0.0
Default gateway: 174.16.0.1

IP address: 192.0.0.2 to 192.0.0.6
Subnet mask : 255.255.255.0
Default gateway:
192.0.0.1

Star Topology for next 5 floors:

Fa6/0   Fa5/0
Fa9/0   Router-PT-Empty   2.0.0.1   2.0.0.2
Router1 Fa7/0
Fa8/0

Star Topology

IP address: 193.0.0.2 to 193.0.0.6
Subnet mask : 255.255.255.0
Default gateway:
193.0.0.1

IP address: 194.0.0.2 to 194.0.0.6
Subnet mask : 255.255.255.0
Default gateway:
194.0.0.1

IP address: 195.0.0.2 to 195.0.0.6
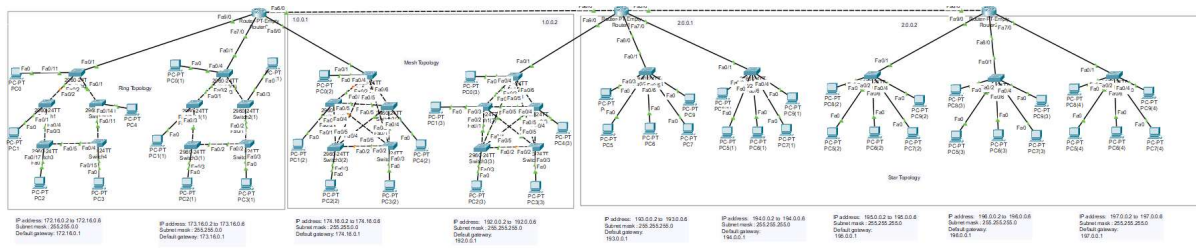Subnet mask : 255.255.255.0
Default gateway:
195.0.0.1

Fa6/0
Fa9/0   Router-PT-Empty
2.0.0.2   Router2 Fa7/0
Fa8/0

Star Topology

195.0.0.2 to 195.0.0.6
:: 255.255.255.0
vay:

IP address: 196.0.0.2 to 196.0.0.6
Subnet mask : 255.255.255.0
Default gateway:
196.0.0.1

IP address: 197.0.0.2 to 197.0.0.6
Subnet mask : 255.255.255.0
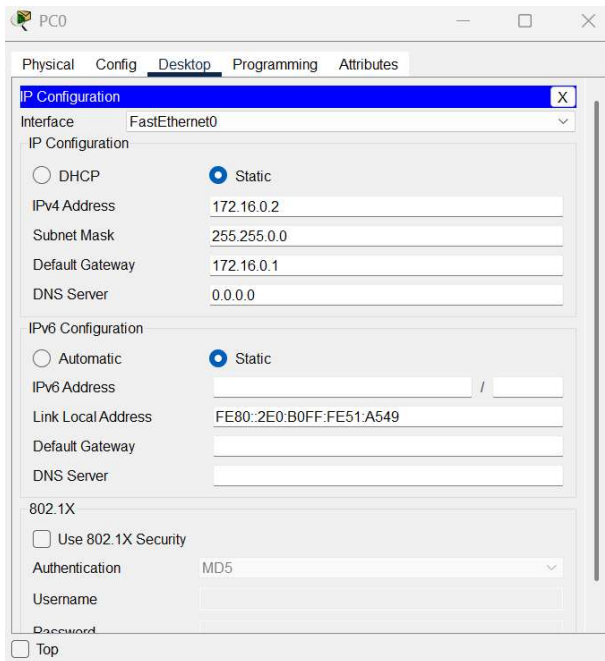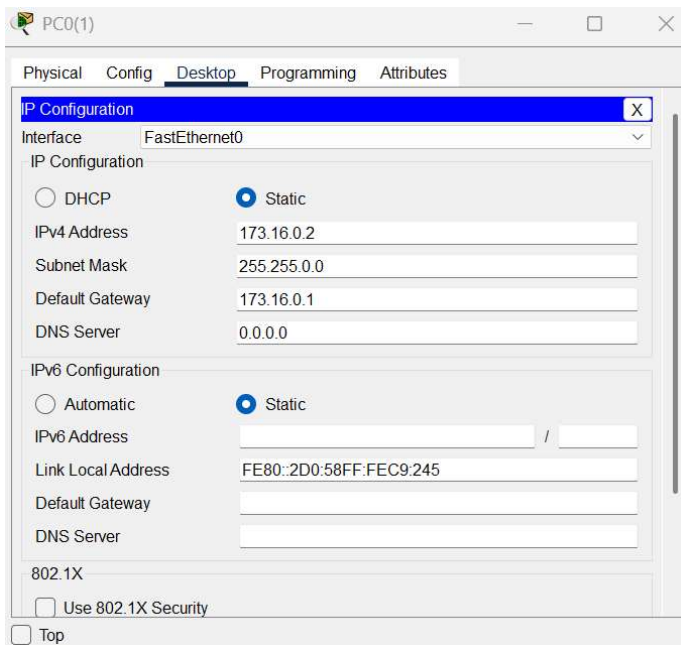Default gateway:
197.0.0.1

Full connection:

IP address: 173.16.0.2 to 173.16.0.6
Subnet mask : 255.255.0.0
Default gateway: 173.16.0.1

IP address: 173.16.0.2 to 173.16.0.6
Subnet mask : 255.255.0.0
Default gateway: 173.16.0.1

IP address: 174.16.0.2 to 174.16.0.6
Subnet mask : 255.255.0.0
Default gateway: 174.16.0.1

IP address: 192.0.0.2 to 192.0.0.6
Subnet mask : 255.255.255.0
Default gateway:
192.0.0.1

IP address: 193.0.0.2 to 193.0.0.6
Subnet mask : 255.255.255.0
Default gateway:
193.0.0.1

IP address: 194.0.0.2 to 194.0.0.6
Subnet mask : 255.255.255.0
Default gateway:
194.0.0.1

IP address: 195.0.0.2 to 195.0.0.6
Subnet mask : 255.255.255.0
Default gateway:
195.0.0.1

IP address: 196.0.0.2 to 196.0.0.6
Subnet mask : 255.255.255.0
Default gateway:
196.0.0.1

IP address: 197.0.0.2 to 197.0.0.6
Subnet mask : 255.255.255.0
Default gateway:
197.0.0.1

2. Allocation of IP Address:

1st Floor:

2nd Floor:

3rd Floor:

4th Floor:

5th Floor:

PC8

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

○ DHCP   ● Static

IPv4 Address: 193.0.0.2

Subnet Mask: 255.255.255.0

Default Gateway: 193.0.0.1

DNS Server: 0.0.0.0

IPv6 Configuration

○ Automatic   ● Static

IPv6 Address: ___ / ___

Link Local Address: FE80::207:ECFF:FECC:3D06
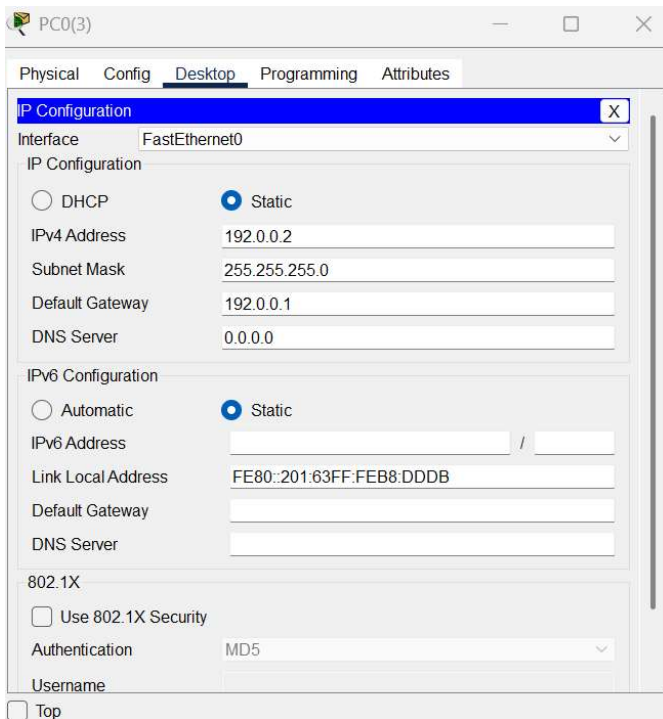
Default Gateway: ___

DNS Server: ___

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username

☐ Top

6th Floor:

PC8(1)

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

○ DHCP   ● Static

IPv4 Address: 194.0.0.2

Subnet Mask: 255.255.255.0

Default Gateway: 194.0.0.1

DNS Server: 0.0.0.0

IPv6 Configuration

○ Automatic   ● Static

IPv6 Address: ___ / ___

Link Local Address: FE80::204:9AFF:FE91:22C6

Default Gateway: ___

DNS Server: ___

802.1X

☐ Use 802.1X Security
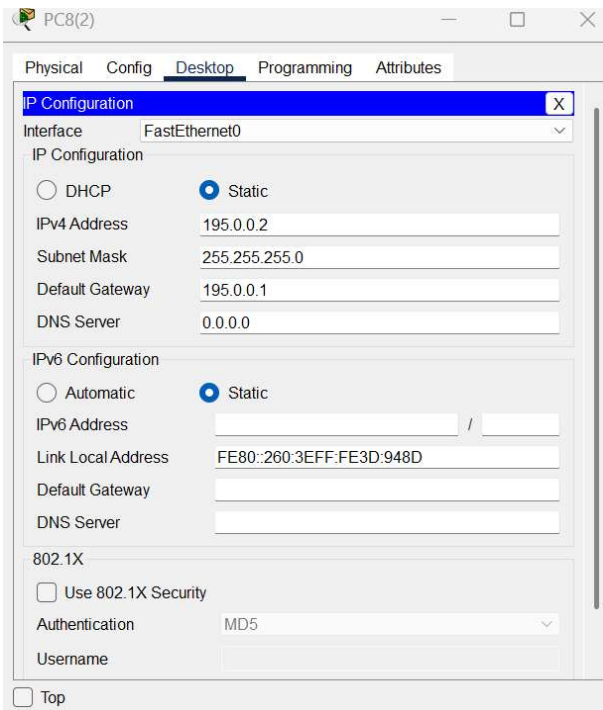
Authentication: MD5

Username

Password

☐ Top

7th Floor:

8TH FLOOR:

9TH FLOOR:

PC8(4)

Physical   Config   **Desktop**   Programming   Attributes

IP Configuration

Interface   FastEthernet0

IP Configuration

○ DHCP   ● Static

IPv4 Address	197.0.0.2
Subnet Mask	255.255.255.0
Default Gateway	197.0.0.1
DNS Server	0.0.0.0

IPv6 Configuration

○ Automatic   ● Static

IPv6 Address	/
Link Local Address	FE80::2D0:97FF:FE6D:1EC9
Default Gateway	
DNS Server	

802.1X

☐ Use 802.1X Security

Authentication   MD5

Username

☐ Top

3. Dynamic Routing:

1st Router:

2nd Router:

3rd Router:

Router2 — Physical | Config | CLI | Attributes

GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
FastEthernet5/0
FastEthernet6/0
FastEthernet7/0
FastEthernet8/0
FastEthernet9/0

RIP Routing

Network

Add

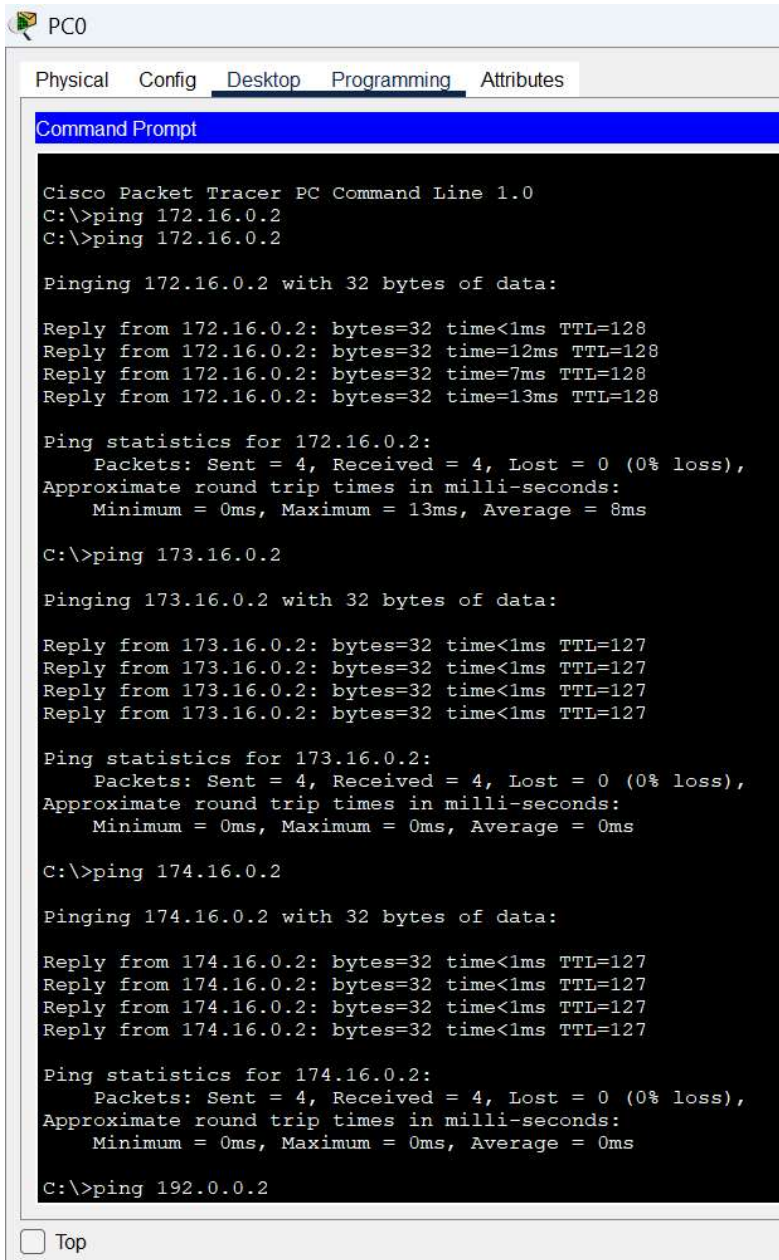| Network Address |
| --- |
| 2.0.0.0 |
| 195.0.0.0 |
| 196.0.0.0 |
| 197.0.0.0 |

Remove

Equivalent IOS Commands

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#
Router(config)#
Router(config)#router rip
Router(config-router)#
```

☐ Top

4. Communication between all computers:

1st Floor PC to Floor to all PC's:

```
PC0

Physical   Config   Desktop   Programming   Attributes

Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 172.16.0.2
C:\>ping 172.16.0.2

Pinging 172.16.0.2 with 32 bytes of data:

Reply from 172.16.0.2: bytes=32 time<1ms TTL=128
Reply from 172.16.0.2: bytes=32 time=12ms TTL=128
Reply from 172.16.0.2: bytes=32 time=7ms TTL=128
Reply from 172.16.0.2: bytes=32 time=13ms TTL=128

Ping statistics for 172.16.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 13ms, Average = 8ms

C:\>ping 173.16.0.2

Pinging 173.16.0.2 with 32 bytes of data:

Reply from 173.16.0.2: bytes=32 time<1ms TTL=127
Reply from 173.16.0.2: bytes=32 time<1ms TTL=127
Reply from 173.16.0.2: bytes=32 time<1ms TTL=127
Reply from 173.16.0.2: bytes=32 time<1ms TTL=127

Ping statistics for 173.16.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 174.16.0.2

Pinging 174.16.0.2 with 32 bytes of data:

Reply from 174.16.0.2: bytes=32 time<1ms TTL=127
Reply from 174.16.0.2: bytes=32 time<1ms TTL=127
Reply from 174.16.0.2: bytes=32 time<1ms TTL=127
Reply from 174.16.0.2: bytes=32 time<1ms TTL=127

Ping statistics for 174.16.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.0.0.2

Top
```

PC0

Physical   Config   **Desktop**   Programming   Attributes

Command Prompt

```
C:\>ping 192.0.0.2

Pinging 192.0.0.2 with 32 bytes of data:

Reply from 192.0.0.2: bytes=32 time<1ms TTL=126
Reply from 192.0.0.2: bytes=32 time<1ms TTL=126
Reply from 192.0.0.2: bytes=32 time=1ms TTL=126
Reply from 192.0.0.2: bytes=32 time<1ms TTL=126

Ping statistics for 192.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 193.0.0.2

Pinging 193.0.0.2 with 32 bytes of data:

Reply from 193.0.0.2: bytes=32 time=10ms TTL=126
Reply from 193.0.0.2: bytes=32 time=1ms TTL=126
Reply from 193.0.0.2: bytes=32 time=13ms TTL=126
Reply from 193.0.0.2: bytes=32 time<1ms TTL=126

Ping statistics for 193.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 13ms, Average = 6ms

C:\>ping 194.0.0.2

Pinging 194.0.0.2 with 32 bytes of data:

Request timed out.
Reply from 194.0.0.2: bytes=32 time<1ms TTL=126
Reply from 194.0.0.2: bytes=32 time=1ms TTL=126
Reply from 194.0.0.2: bytes=32 time=21ms TTL=126

Ping statistics for 194.0.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 21ms, Average = 7ms

C:\>ping 195.0.0.2

Pinging 195.0.0.2 with 32 bytes of data:
```

☐ Top

PC0

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 21ms, Average = 7ms

C:\>ping 195.0.0.2

Pinging 195.0.0.2 with 32 bytes of data:

Reply from 195.0.0.2: bytes=32 time<1ms TTL=125
Reply from 195.0.0.2: bytes=32 time<1ms TTL=125
Reply from 195.0.0.2: bytes=32 time<1ms TTL=125
Reply from 195.0.0.2: bytes=32 time=1ms TTL=125

Ping statistics for 195.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 196.0.0.2

Pinging 196.0.0.2 with 32 bytes of data:

Reply from 196.0.0.2: bytes=32 time<1ms TTL=125
Reply from 196.0.0.2: bytes=32 time<1ms TTL=125
Reply from 196.0.0.2: bytes=32 time=25ms TTL=125
Reply from 196.0.0.2: bytes=32 time=2ms TTL=125

Ping statistics for 196.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 25ms, Average = 6ms

C:\>ping 197.0.0.2

Pinging 197.0.0.2 with 32 bytes of data:

Reply from 197.0.0.2: bytes=32 time<1ms TTL=125
Reply from 197.0.0.2: bytes=32 time<1ms TTL=125
Reply from 197.0.0.2: bytes=32 time<1ms TTL=125
Reply from 197.0.0.2: bytes=32 time<1ms TTL=125

Ping statistics for 197.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```