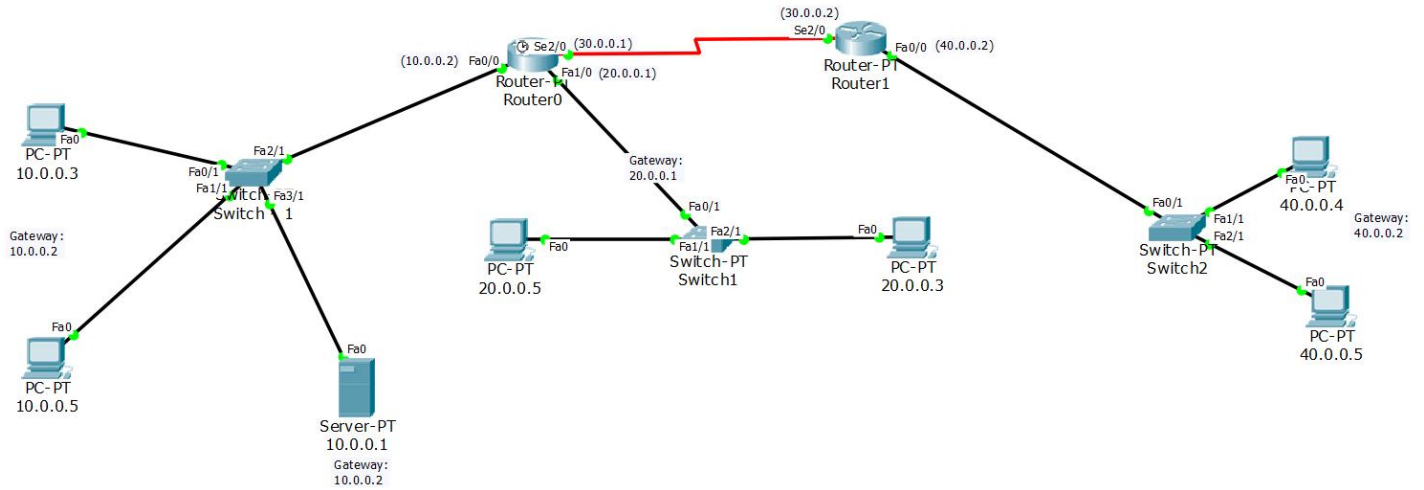


## Experiment - 4(b)

### Topology:



### Server Configuration:

10.0.0.1

Physical Config Services Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Setting:

**INTERFACE**

FastEthernet0

### Global Settings

Display Name: 10.0.0.1

Interfaces: FastEthernet0

Gateway/DNS

☐ DHCP

☒ Static

Gateway: 10.0.0.2

DNS Server:

Gateway/DNS IPv6

☐ DHCP

☐ Auto Config

☒ Static

IPv6 Gateway:

IPv6 DNS Server:

10.0.0.1

Physical

Config

Services

Desktop

Custom Interface

GLOBAL

Settings

Algorithm Setting:

INTERFACE

FastEthernet0

FastEthernet0

Port Status ☒ On

Bandwidth ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 000A.415C.5A51

IP Configuration

☐ DHCP
 ☒ Static

IP Address 10.0.0.1

Subnet Mask 255.0.0.0

IPv6 Configuration

☐ DHCP
 ☐ Auto Config
 ☒ Static

IPv6 Address /

Link Local Address: 80::20A:41FF:FE5C:5A51

10.0.0.1

Physical

Config

Services

Desktop

Custom Interface

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

DHCP

Interface FastEthernet0

Service ☒ On ☐ Off

Pool Name serverPool

Default Gateway 10.0.0.2

DNS Server 0.0.0.0

Start IP Address : 10 0 0 3

Subnet Mask: 255 0 0 0

Maximum number of Users : 512

TFTP Server: 0.0.0.0

Add

Save

Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max Users	TFTP
serve...	20.0.0.1	0.0.0.0	20.0.0.3	255.0....	512	0.0.0.0
serve...	40.0.0.2	0.0.0.0	40.0.0.3	255.0....	512	0.0.0.0
serve...	10.0.0.2	0.0.0.0	10.0.0.3	255.0....	512	0.0.0.0

10.0.0.1

Physical

Config

Services

Desktop

Custom Interface

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

DHCP

Interface

FastEthernet0

Service

On

Off

Pool Name

serverPool - 3

Default Gateway

40.0.0.2

DNS Server

0.0.0.0

Start IP Address :

40

0

0

3

Subnet Mask:

255

0

0

0

Maximum number of Users :

512

TFTP Server:

0.0.0.0

Add

Save

Remove

ol Na	ault Gatev	NS Serv	rt IP Addi	bnet Mi	lax Use	TFTP
serve...	20.0.0.1	0.0.0.0	20.0.0.3	255.0....	512	0.0.0.0
serve...	40.0.0.2	0.0.0.0	40.0.0.3	255.0....	512	0.0.0.0
serve...	10.0.0.2	0.0.0.0	10.0.0.3	255.0....	512	0.0.0.0

10.0.0.1

Physical

Config

Services

Desktop

Custom Interface

SERVICES

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

DHCP

Interface

FastEthernet0

Service

On

Off

Pool Name

serverPool - 2

Default Gateway

20.0.0.1

DNS Server

0.0.0.0

Start IP Address :

20

0

0

3

Subnet Mask:

255

0

0

0

Maximum number of Users :

512

TFTP Server:

0.0.0.0


Add

Save

Remove

ol Na	ault Gatev	NS Serv	rt IP Addi	bnet Mi	lax Use	TFTP
serve...	20.0.0.1	0.0.0.0	20.0.0.3	255.0....	512	0.0.0.0
serve...	40.0.0.2	0.0.0.0	40.0.0.3	255.0....	512	0.0.0.0
serve...	10.0.0.2	0.0.0.0	10.0.0.3	255.0....	512	0.0.0.0

## Router - 0 (Configuration)

 Router0

Physical Config CLI

### IOS Command Line Interface

```
Router>enable
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Fa0/0
Router(config-if)#ip address 10.0.0.2 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
state to up


Router(config-if)#exit
Router(config)#interface Fa1/0
Router(config-if)#ip address 20.0.0.1 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed
state to up

Router(config-if)#exit
```

Copy Paste

 Router0

Physical Config CLI

### IOS Command Line Interface

```
Router(config)#interface Se2/0
Router(config-if)#ip address 30.0.0.1 255.0.0.0
Router(config-if)#no shutdown

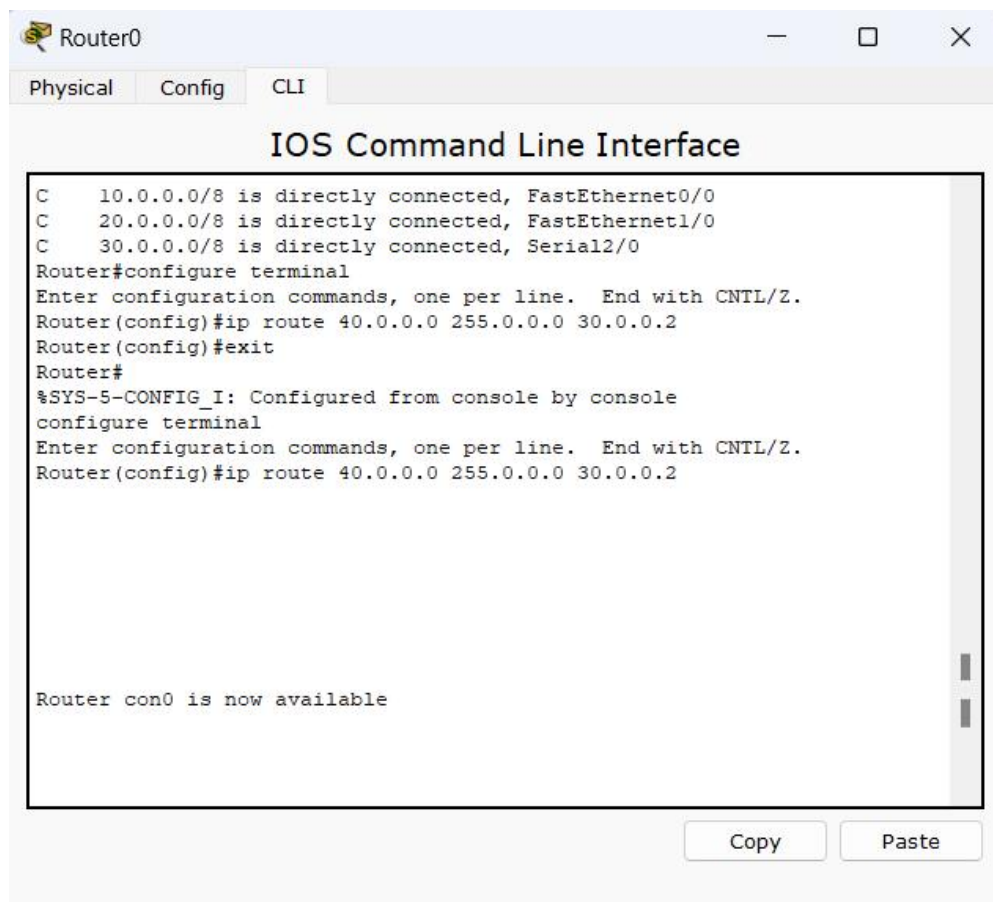
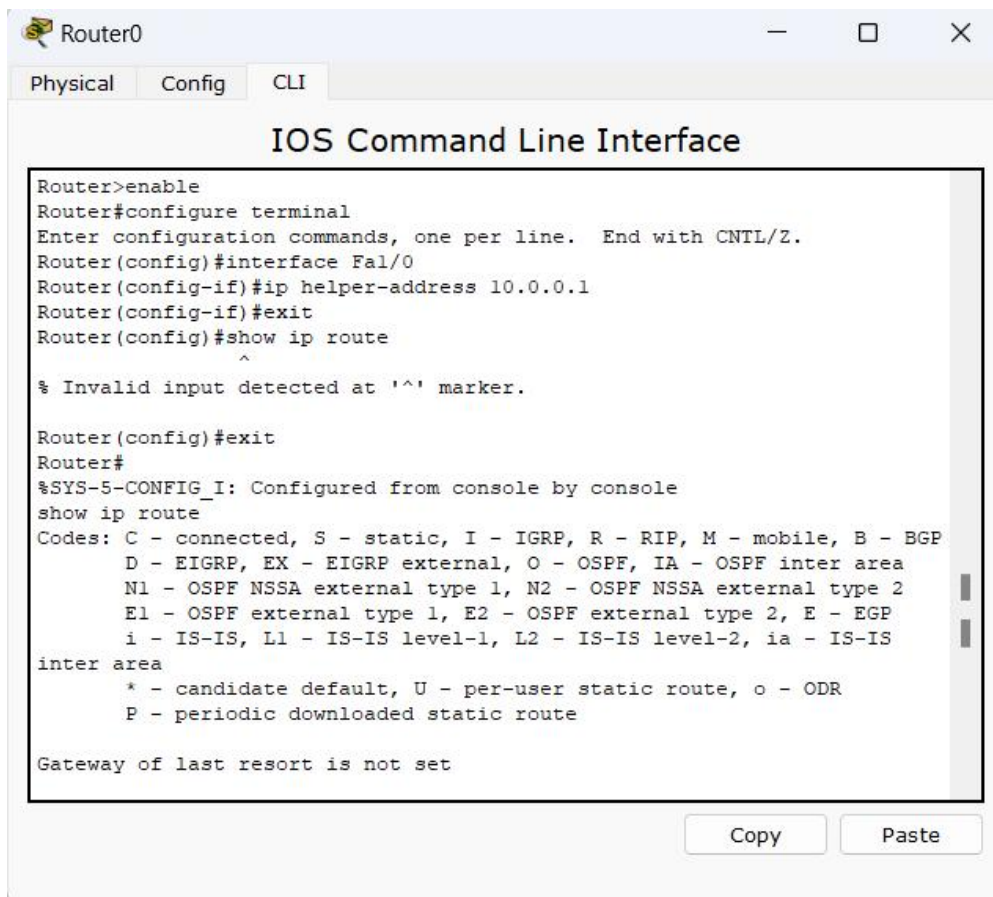
%LINK-5-CHANGED: Interface Serial2/0, changed state to down
Router(config-if)#exit
Router(config)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state
to up


Router con0 is now available
```

Copy Paste





## Router - 1 Configuraion:

 Router1

Physical Config CLI

IOS Command Line Interface

```
Router>enable
Router#config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface Se2/0
Router(config-if)#ip address 30.0.0.2 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial2/0, changed state to up


Router(config-if)#exit
Router(config)#inte
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state
to
Router(config)#interface Fa0/0
Router(config-if)#ip address 40.0.0.1 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed
state to up

Router(config-if)#exit
```

Copy Paste

 Router1

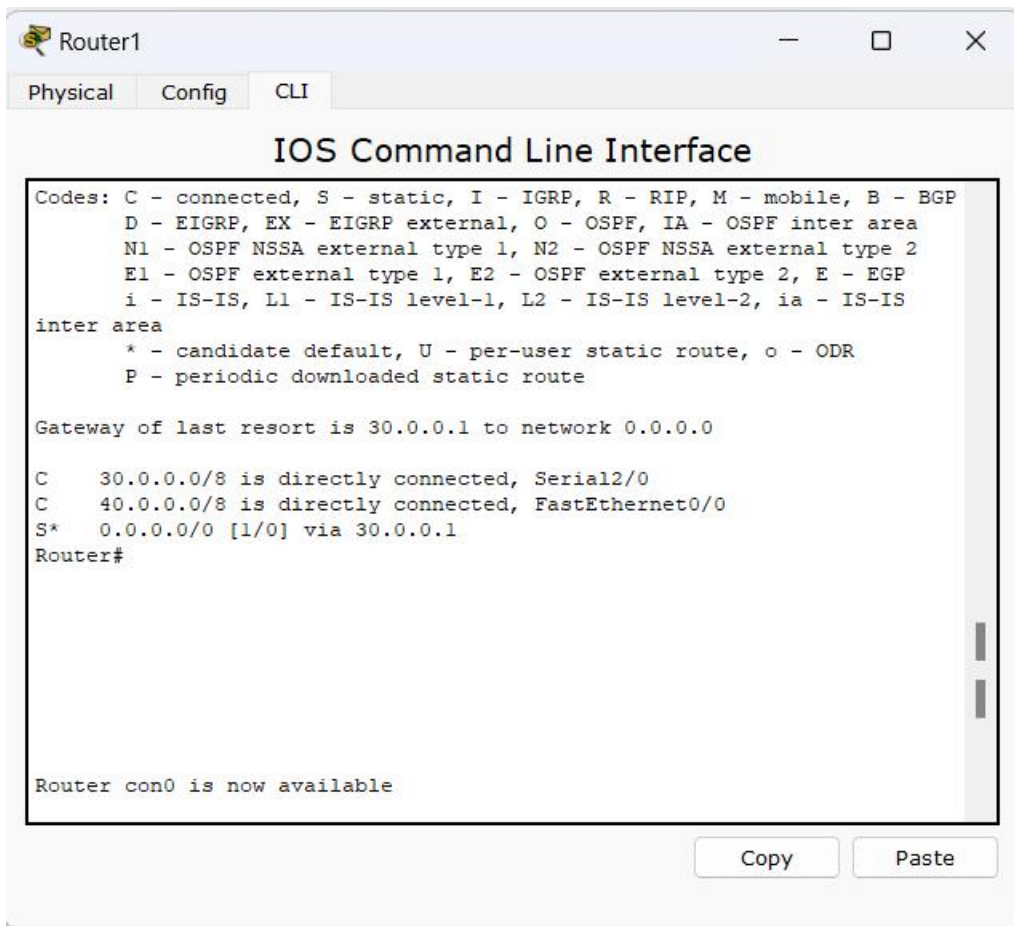
Physical Config CLI

IOS Command Line Interface

```
Router(config)#interface Fa0/0
Router(config-if)#no ip address
Router(config-if)#ip address 40.0.0.2
% Incomplete command.
Router(config-if)#ip address 40.0.0.2 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#exir
^
% Invalid input detected at '^' marker.

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
config t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface Fa0/0
Router(config-if)#ip helper-address 10.0.0.1
Router(config-if)#exit
Router(config)#ip route 0.0.0.0 0.0.0.0 30.0.0.1
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
```

Copy Paste



## PC - 1 Configuration (Through DHCP):

10.0.0.3

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### Global Settings

Display Name

**Gateway/DNS**

☒ DHCP

☐ Static

Gateway

DNS Server

**Gateway/DNS Ipv6**

☒ DHCP

☐ Auto Config

☐ Static

IPv6 Gateway

IPv6 DNS Server

10.0.0.3

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### FastEthernet0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address

**IP Configuration**

☒ DHCP

☐ Static

IP Address

Subnet Mask

**IPv6 Configuration**

☒ DHCP

☐ Auto Config

☐ Static

IPv6 Address

Link Local Address:



## PC - 2 Configuration (Through DHCP):

10.0.0.5

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### Global Settings

Display Name 10.0.0.5

Gateway/DNS

☒ DHCP

☐ Static

Gateway 10.0.0.2

DNS Server 0.0.0.0

Gateway/DNS Ipv6

☒ DHCP

☐ Auto Config

☐ Static

IPv6 Gateway

IPv6 DNS Server

10.0.0.5

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### FastEthernet0

Port Status ☒ On

Bandwidth ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0009.7C2B.5E49

IP Configuration

☒ DHCP

☐ Static

IP Address 10.0.0.5

Subnet Mask 255.0.0.0

IPv6 Configuration

☒ DHCP

☐ Auto Config

☐ Static

IPv6 Address /

Link Local Address: 30::209:7CFF:FE2B:5E49

## PC - 3 Configuration (Through DHCP):

20.0.0.5

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### Global Settings

Display Name 20.0.0.5

#### Gateway/DNS

☒ DHCP  
☐ Static

Gateway 20.0.0.1

DNS Server 0.0.0.0

#### Gateway/DNS Ipv6

☒ DHCP  
☐ Auto Config  
☐ Static

IPv6 Gateway

IPv6 DNS Server

20.0.0.5

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### FastEthernet0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0010.111C.436D

#### IP Configuration

☒ DHCP  
☐ Static

IP Address 20.0.0.5

Subnet Mask 255.0.0.0

#### IPv6 Configuration

☒ DHCP  
☐ Auto Config  
☐ Static

IPv6 Address /

Link Local Address: 30::210:11FF:FE1C:436D

## PC - 4 Configuration (Through DHCP):

20.0.0.3

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### Global Settings

Display Name 20.0.0.3

**Gateway/DNS**

☒ DHCP

☐ Static

Gateway 20.0.0.1

DNS Server 0.0.0.0

**Gateway/DNS Ipv6**

☒ DHCP

☐ Auto Config

☐ Static

IPv6 Gateway

IPv6 DNS Server

20.0.0.3

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### FastEthernet0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0000.0C46.1EA4

**IP Configuration**

☒ DHCP

☐ Static

IP Address 20.0.0.3

Subnet Mask 255.0.0.0

**IPv6 Configuration**

☒ DHCP

☐ Auto Config

☐ Static

IPv6 Address /

Link Local Address: FE80::200:CFF:FE46:1EA4

## PC - 5 Configuration (Through DHCP):

40.0.0.4

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### Global Settings

Display Name 40.0.0.4

**Gateway/DNS**

☒ DHCP  
☐ Static

Gateway 40.0.0.2

DNS Server 0.0.0.0

**Gateway/DNS Ipv6**

☒ DHCP  
☐ Auto Config  
☐ Static

IPv6 Gateway

IPv6 DNS Server

40.0.0.4

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### FastEthernet0

Port Status ☒ On

Bandwidth ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0060.2F85.6BBC

**IP Configuration**

☒ DHCP  
☐ Static

IP Address 40.0.0.4

Subnet Mask 255.0.0.0

**IPv6 Configuration**

☒ DHCP  
☐ Auto Config  
☐ Static

IPv6 Address /

Link Local Address: 30::260:2FFF:FE85:6BBC



## PC - 6 Configuration (Through DHCP):

40.0.0.5

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### Global Settings

Display Name 40.0.0.5

Gateway/DNS

☒ DHCP

☐ Static

Gateway 40.0.0.2

DNS Server 0.0.0.0

Gateway/DNS Ipv6

☒ DHCP

☐ Auto Config

☐ Static

IPv6 Gateway

IPv6 DNS Server

40.0.0.5

Physical Config Desktop Custom Interface

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

### FastEthernet0

Port Status ☒ On

Bandwidth ☐ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address 0005.5ED4.249C

IP Configuration

☒ DHCP

☐ Static

IP Address 40.0.0.5

Subnet Mask 255.0.0.0

IPv6 Configuration

☒ DHCP

☐ Auto Config

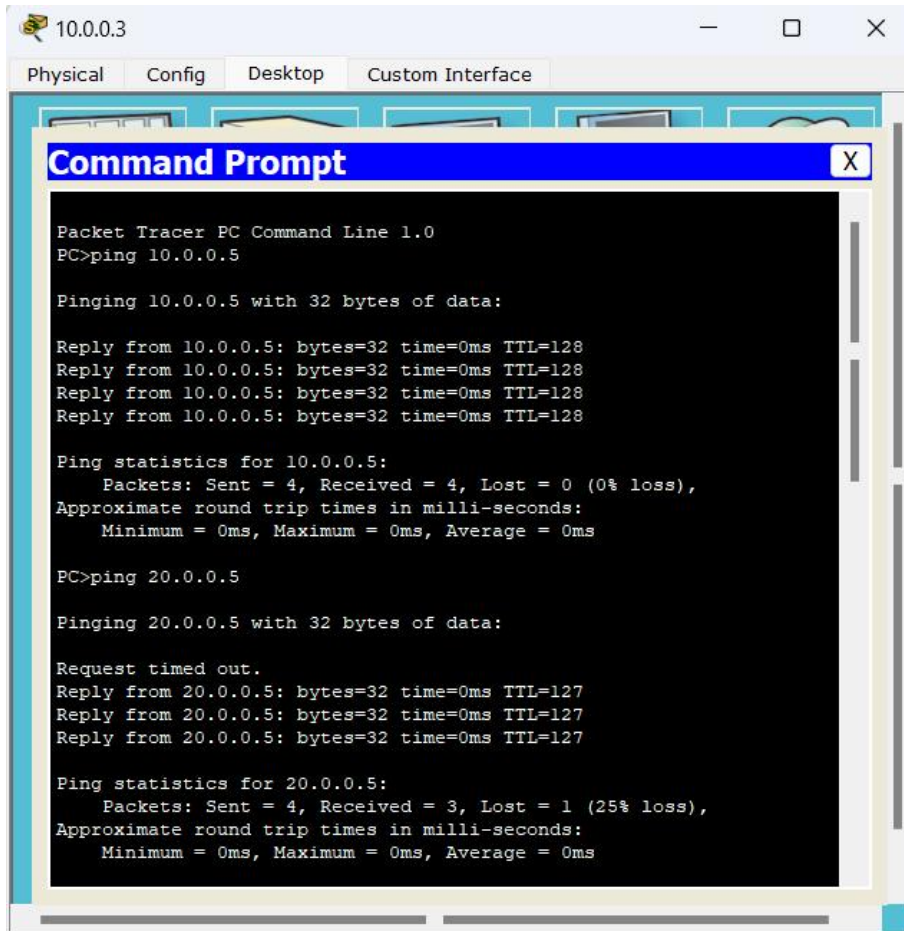
☐ Static

IPv6 Address /

Link Local Address: 30::205:5EFF:FED4:249C

## Output (Ping Messages)

### From PC - 1 to All Other PCs:



10.0.0.3

Physical Config Desktop Custom Interface

**Command Prompt** X

```
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.5

Pinging 10.0.0.5 with 32 bytes of data:

Reply from 10.0.0.5: bytes=32 time=0ms TTL=128
Reply from 10.0.0.5: bytes=32 time=0ms TTL=128
Reply from 10.0.0.5: bytes=32 time=0ms TTL=128
Reply from 10.0.0.5: bytes=32 time=0ms TTL=128

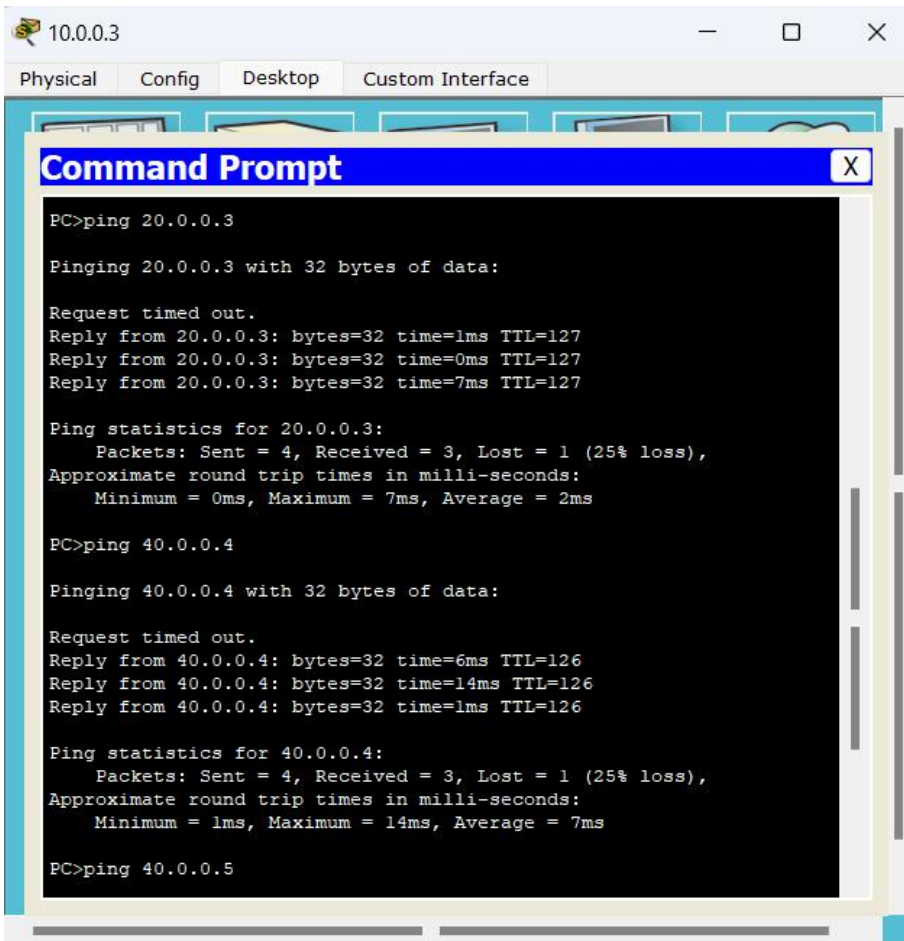
Ping statistics for 10.0.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 20.0.0.5

Pinging 20.0.0.5 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.5: bytes=32 time=0ms TTL=127
Reply from 20.0.0.5: bytes=32 time=0ms TTL=127
Reply from 20.0.0.5: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.5:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```



10.0.0.3

Physical Config Desktop Custom Interface

**Command Prompt** X

```
PC>ping 20.0.0.3

Pinging 20.0.0.3 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.3: bytes=32 time=1ms TTL=127
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Reply from 20.0.0.3: bytes=32 time=7ms TTL=127

Ping statistics for 20.0.0.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 7ms, Average = 2ms

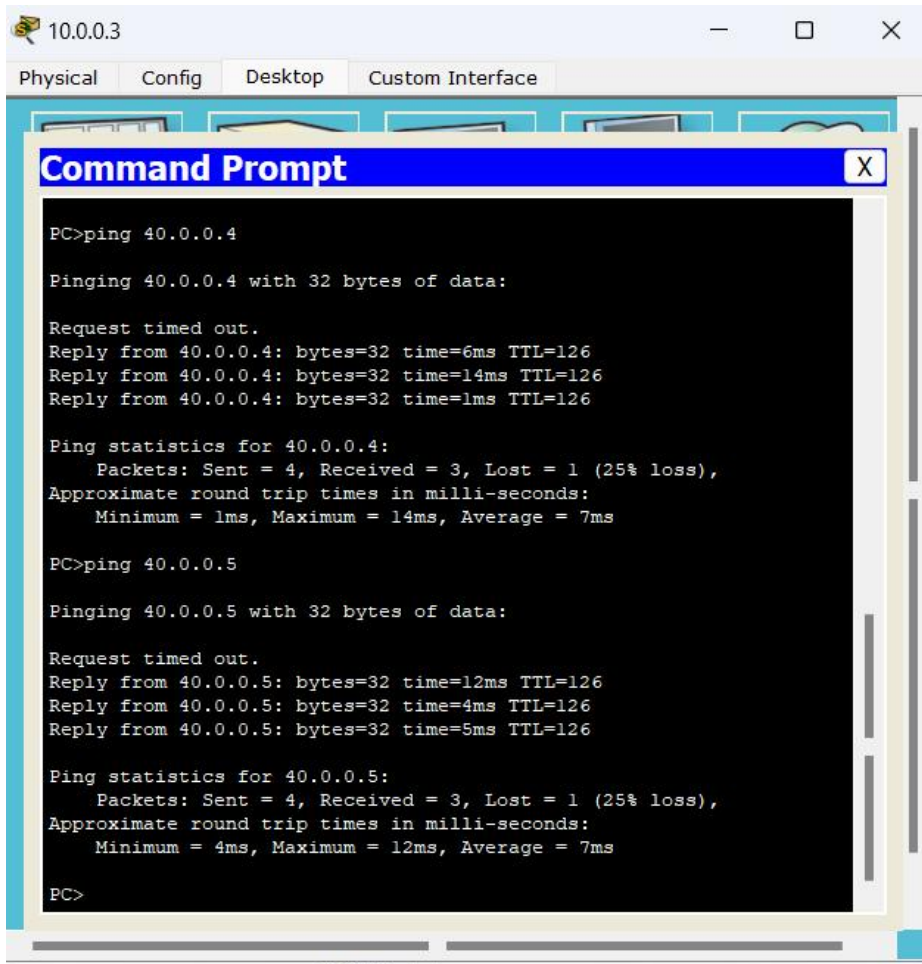
PC>ping 40.0.0.4

Pinging 40.0.0.4 with 32 bytes of data:

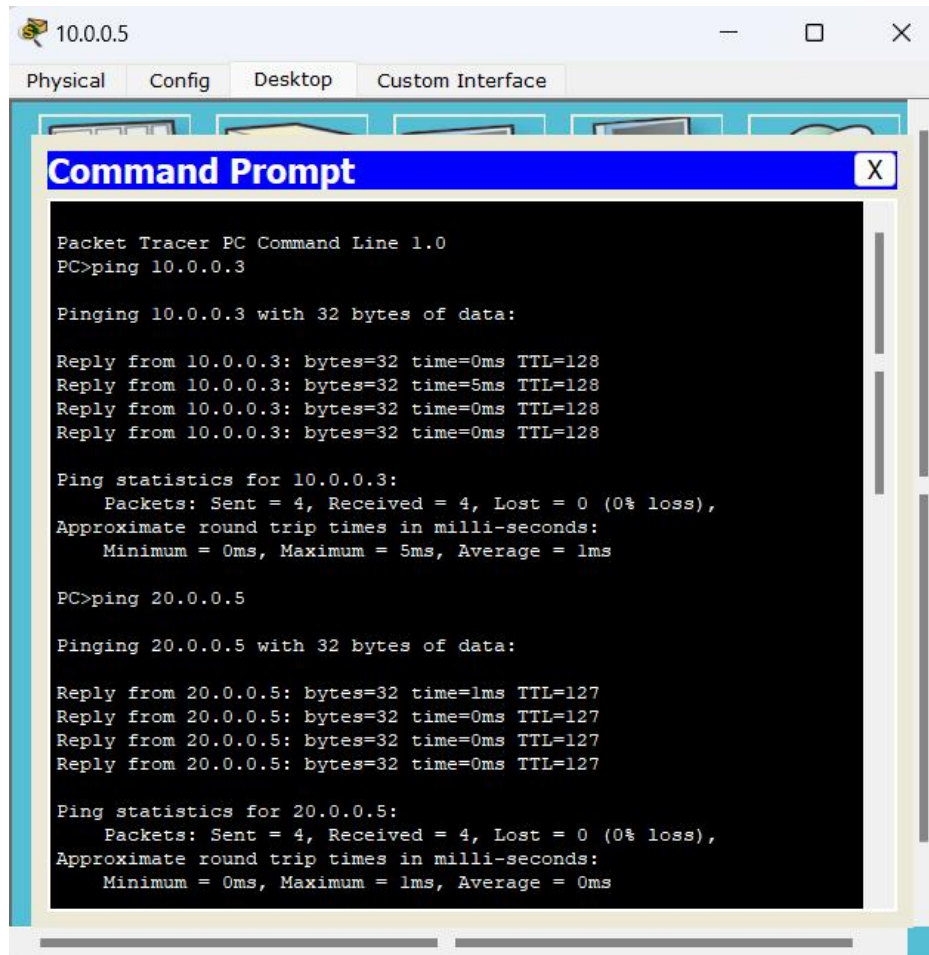
Request timed out.
Reply from 40.0.0.4: bytes=32 time=6ms TTL=126
Reply from 40.0.0.4: bytes=32 time=14ms TTL=126
Reply from 40.0.0.4: bytes=32 time=1ms TTL=126

Ping statistics for 40.0.0.4:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 14ms, Average = 7ms

PC>ping 40.0.0.5
```



## From PC - 2 to All Other PCs:



10.0.0.5

Physical Config Desktop Custom Interface

**Command Prompt** X

```
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data:

Reply from 10.0.0.3: bytes=32 time=0ms TTL=128
Reply from 10.0.0.3: bytes=32 time=5ms TTL=128
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128

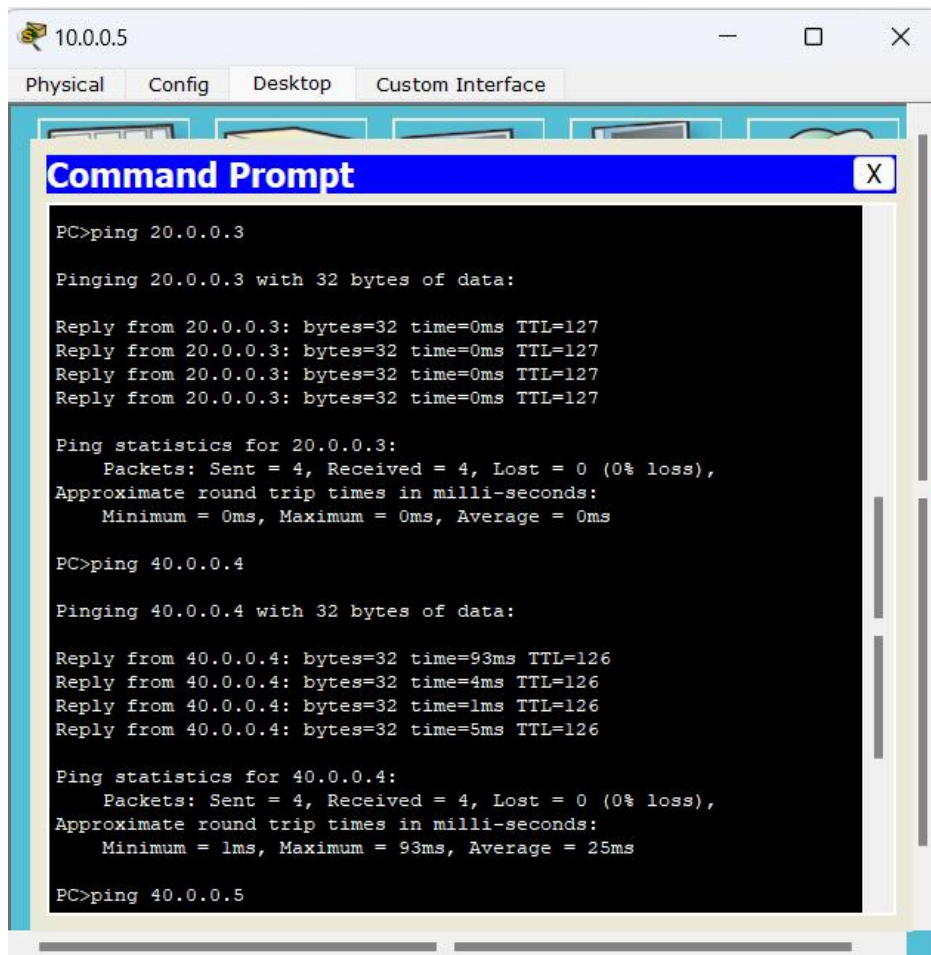
Ping statistics for 10.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 5ms, Average = 1ms

PC>ping 20.0.0.5

Pinging 20.0.0.5 with 32 bytes of data:

Reply from 20.0.0.5: bytes=32 time=1ms TTL=127
Reply from 20.0.0.5: bytes=32 time=0ms TTL=127
Reply from 20.0.0.5: bytes=32 time=0ms TTL=127
Reply from 20.0.0.5: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```



10.0.0.5

Physical Config Desktop Custom Interface

**Command Prompt** X

```
PC>ping 20.0.0.3

Pinging 20.0.0.3 with 32 bytes of data:

Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127
Reply from 20.0.0.3: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 40.0.0.4

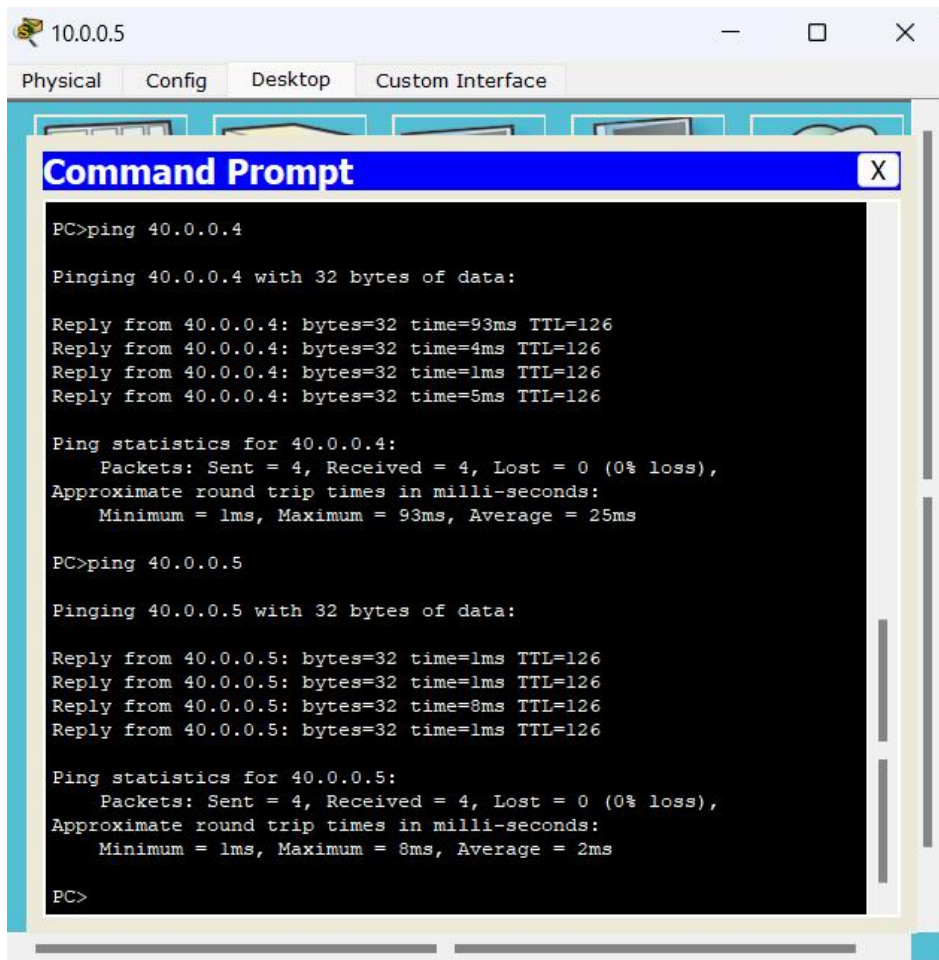
Pinging 40.0.0.4 with 32 bytes of data:

Reply from 40.0.0.4: bytes=32 time=93ms TTL=126
Reply from 40.0.0.4: bytes=32 time=4ms TTL=126
Reply from 40.0.0.4: bytes=32 time=1ms TTL=126
Reply from 40.0.0.4: bytes=32 time=5ms TTL=126

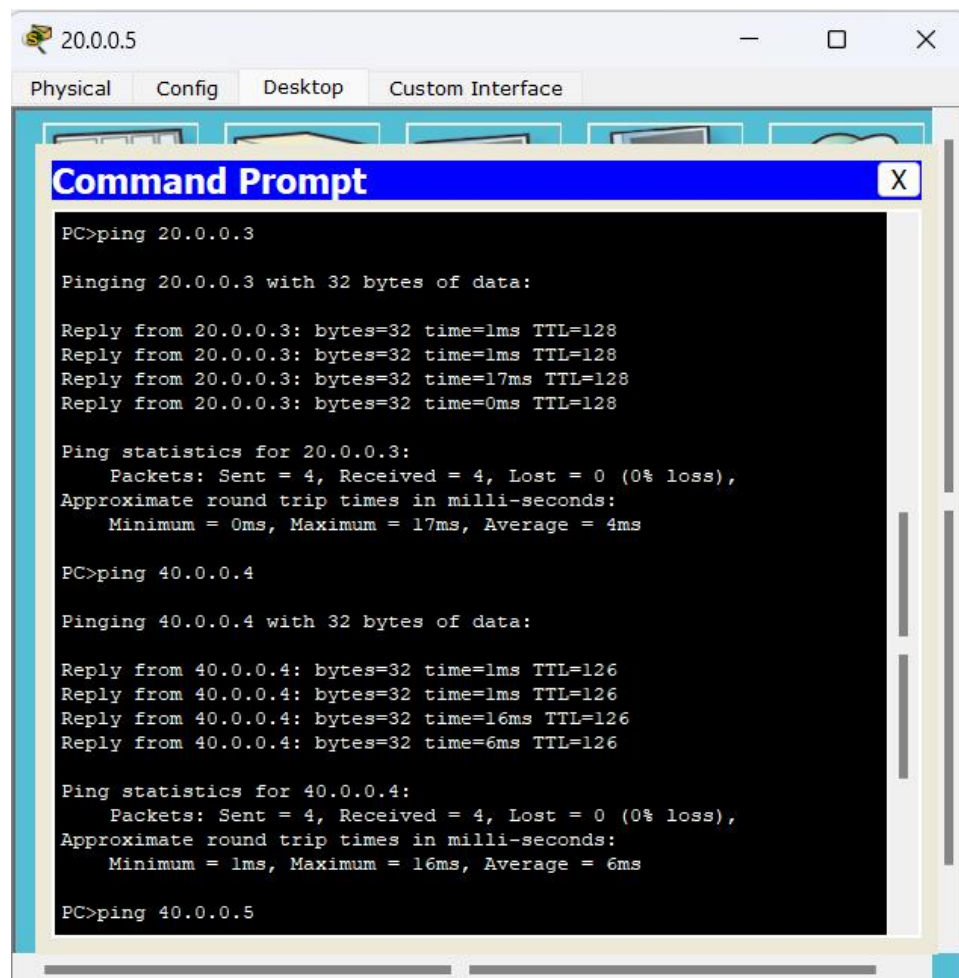
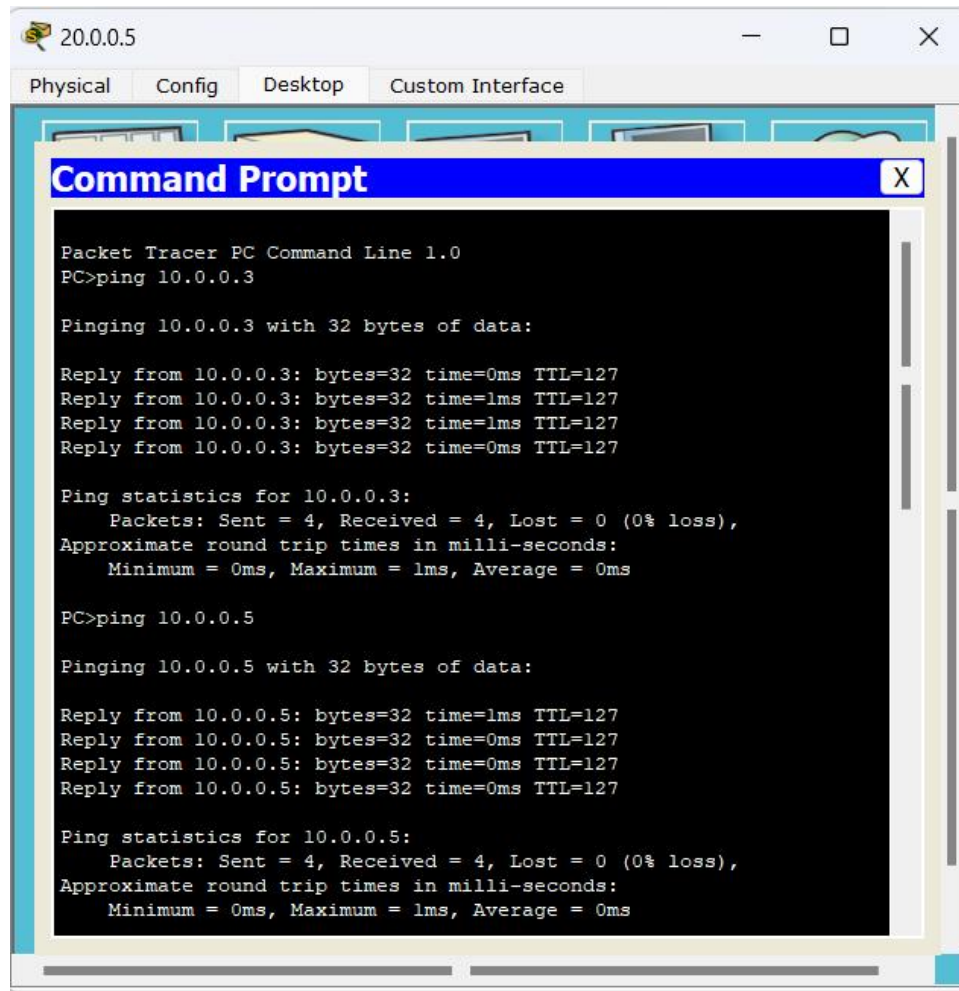
Ping statistics for 40.0.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 93ms, Average = 25ms

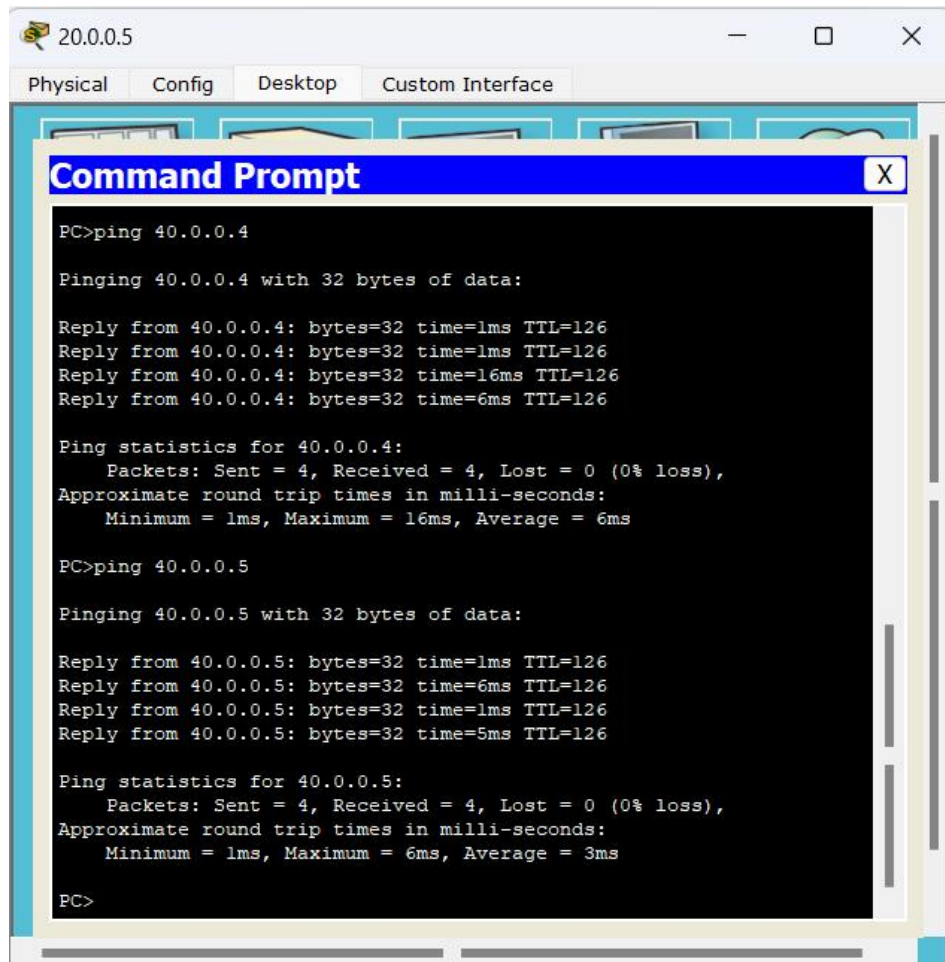
PC>ping 40.0.0.5
```



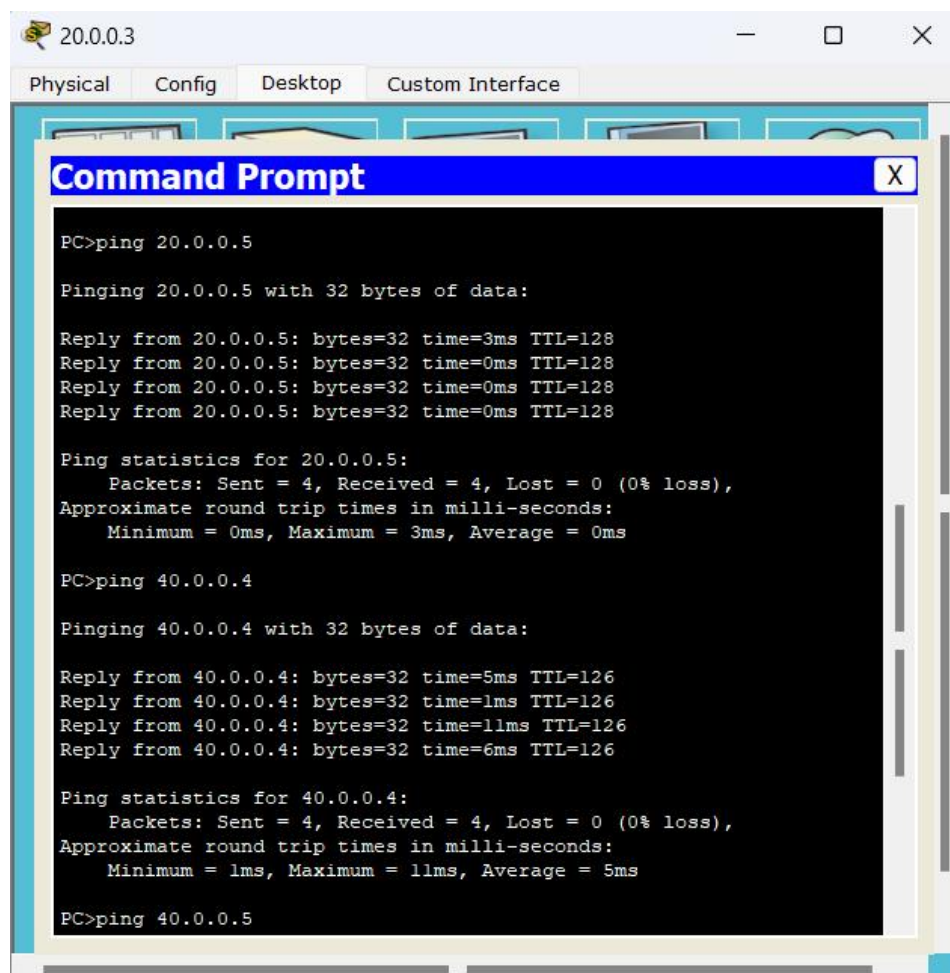
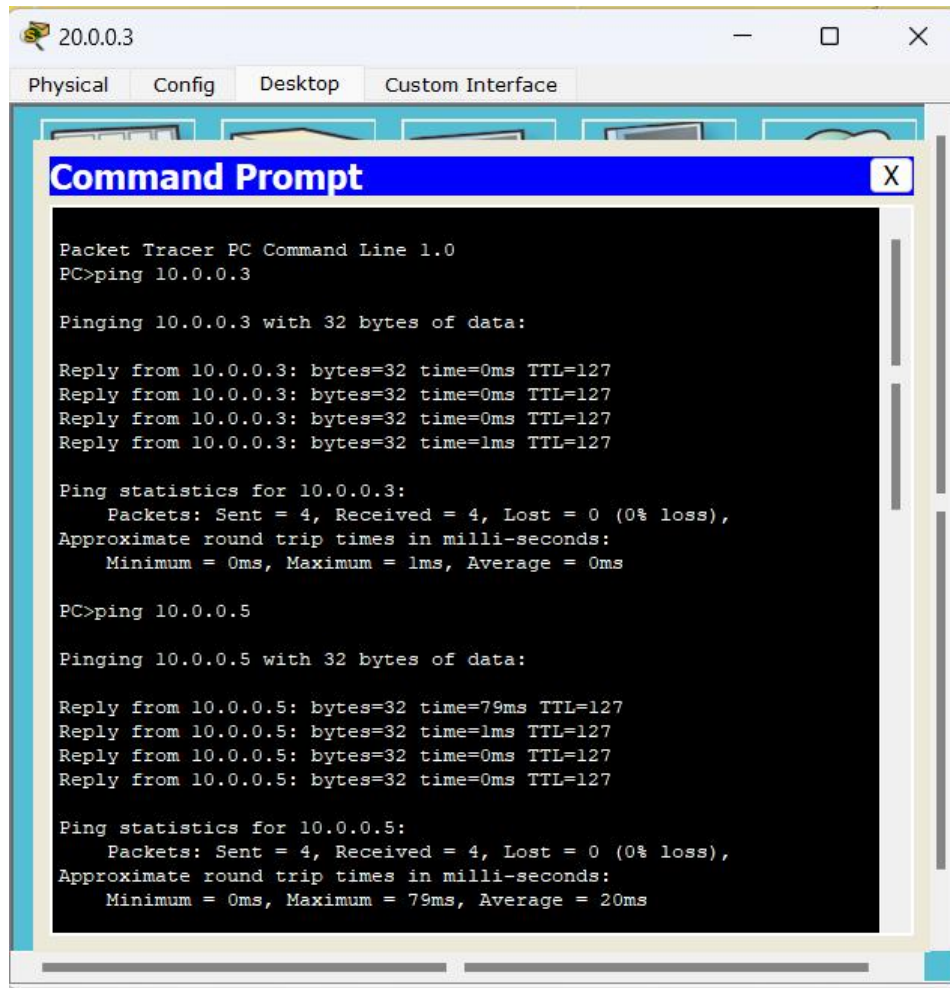


## From PC - 3 to All Other PCs:

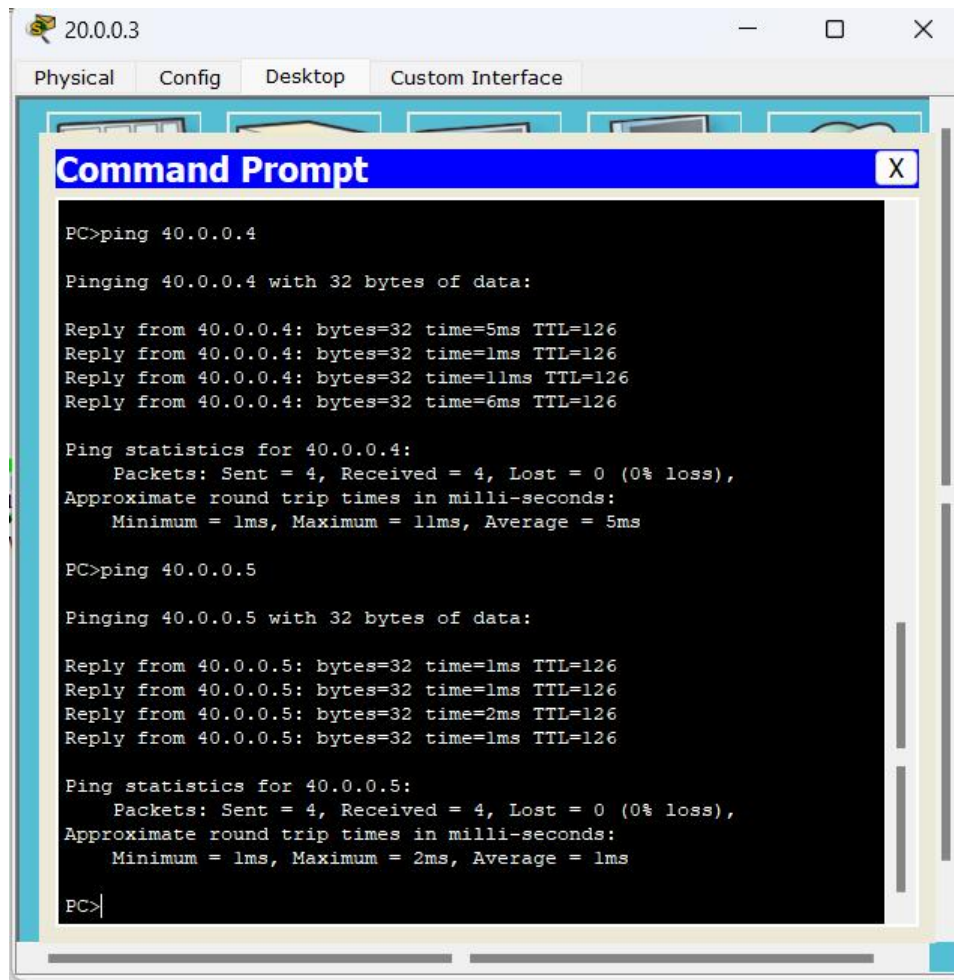




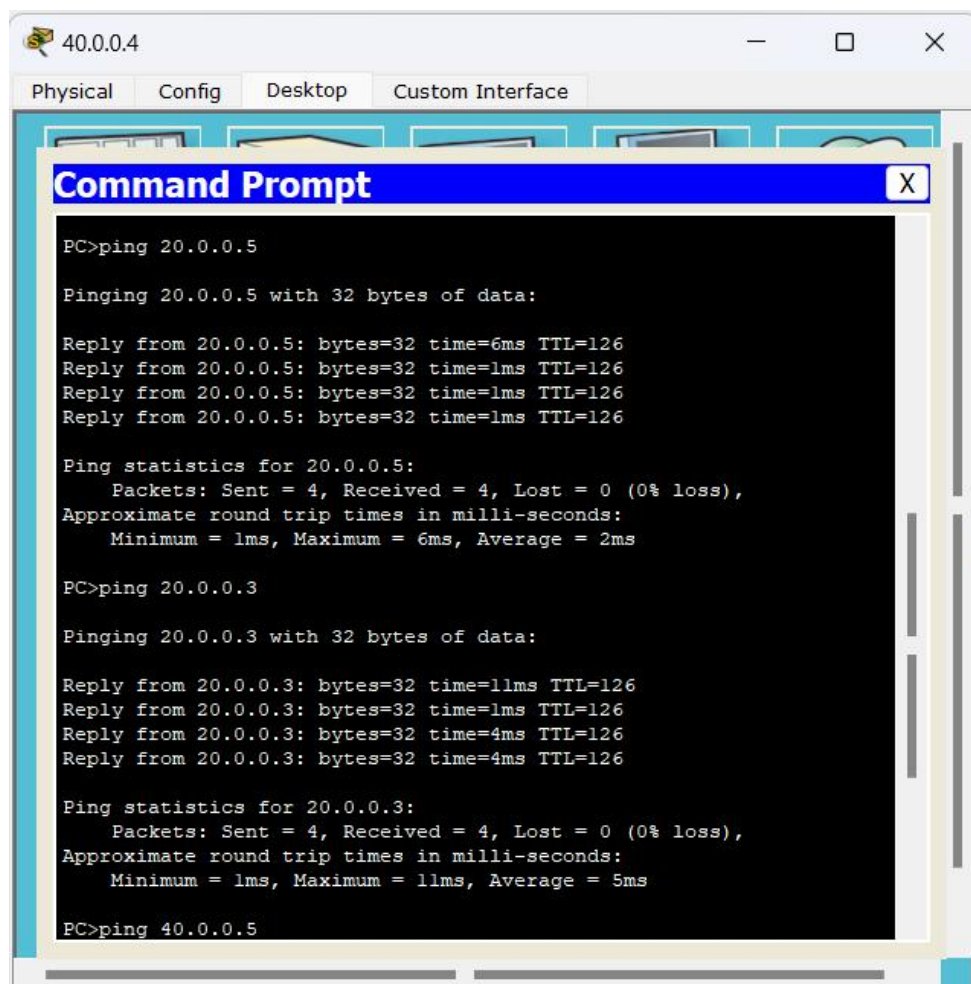
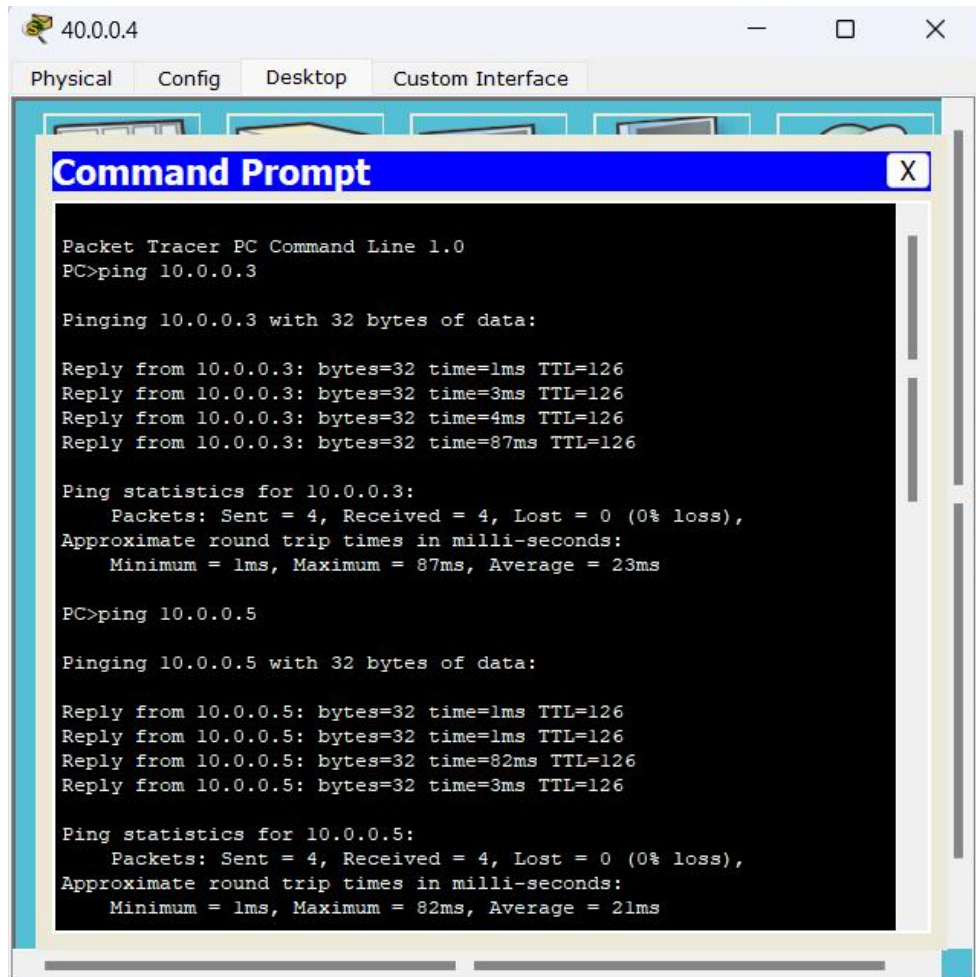
## From PC - 4 to All Other PCs:

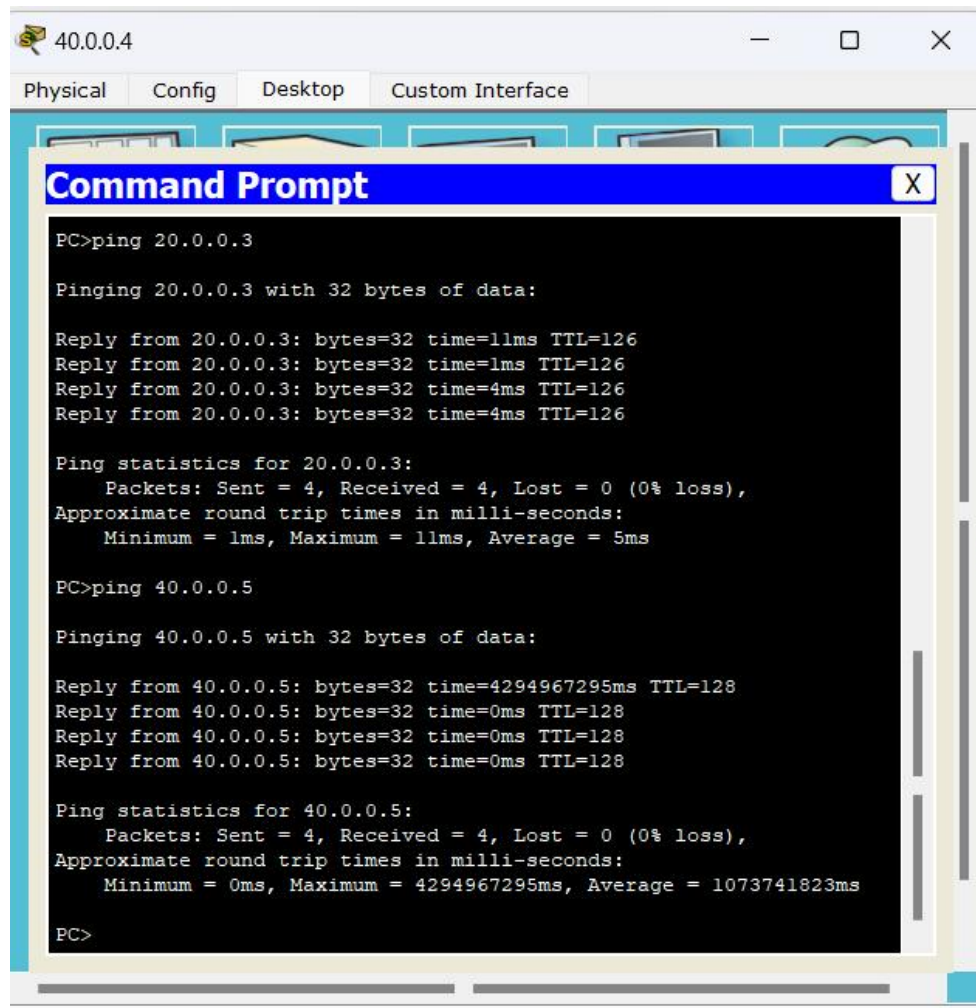




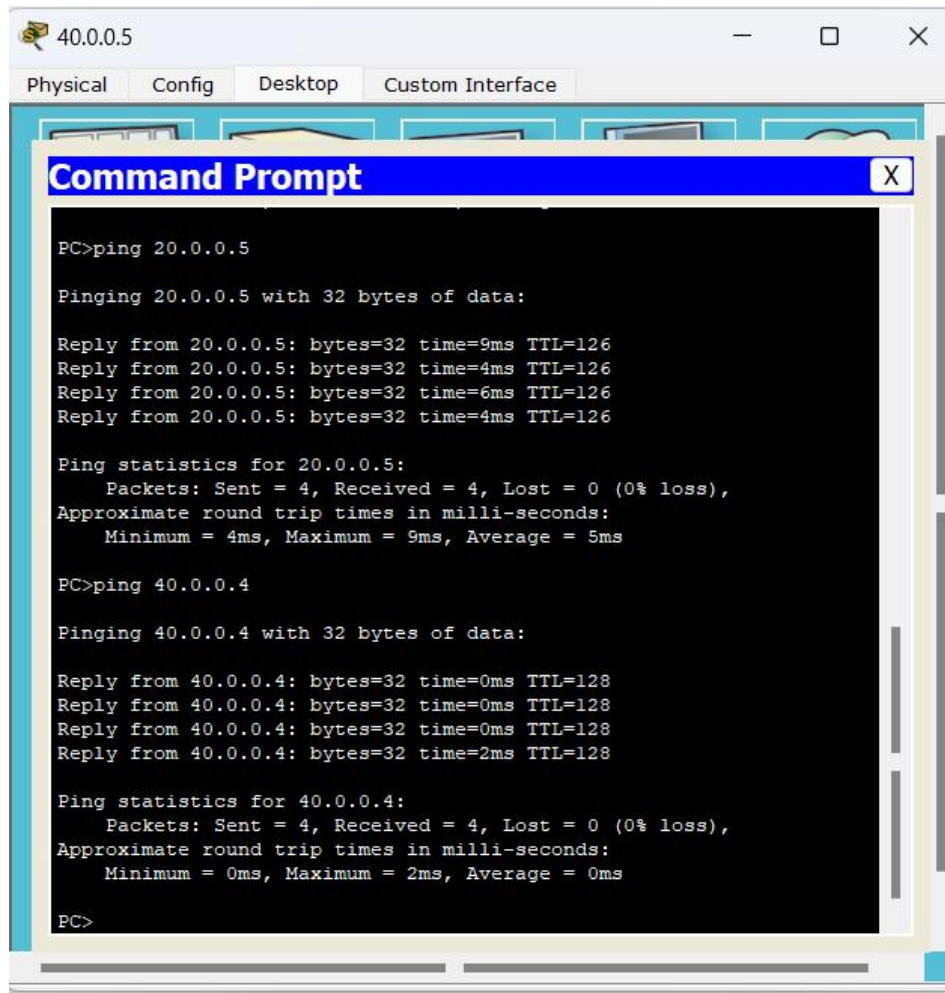


## From PC - 5 to All Other PCs:





## From PC - 6 to All Other PCs:



```
PC>ping 20.0.0.5

Pinging 20.0.0.5 with 32 bytes of data:

Reply from 20.0.0.5: bytes=32 time=9ms TTL=126
Reply from 20.0.0.5: bytes=32 time=4ms TTL=126
Reply from 20.0.0.5: bytes=32 time=6ms TTL=126
Reply from 20.0.0.5: bytes=32 time=4ms TTL=126

Ping statistics for 20.0.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 9ms, Average = 5ms

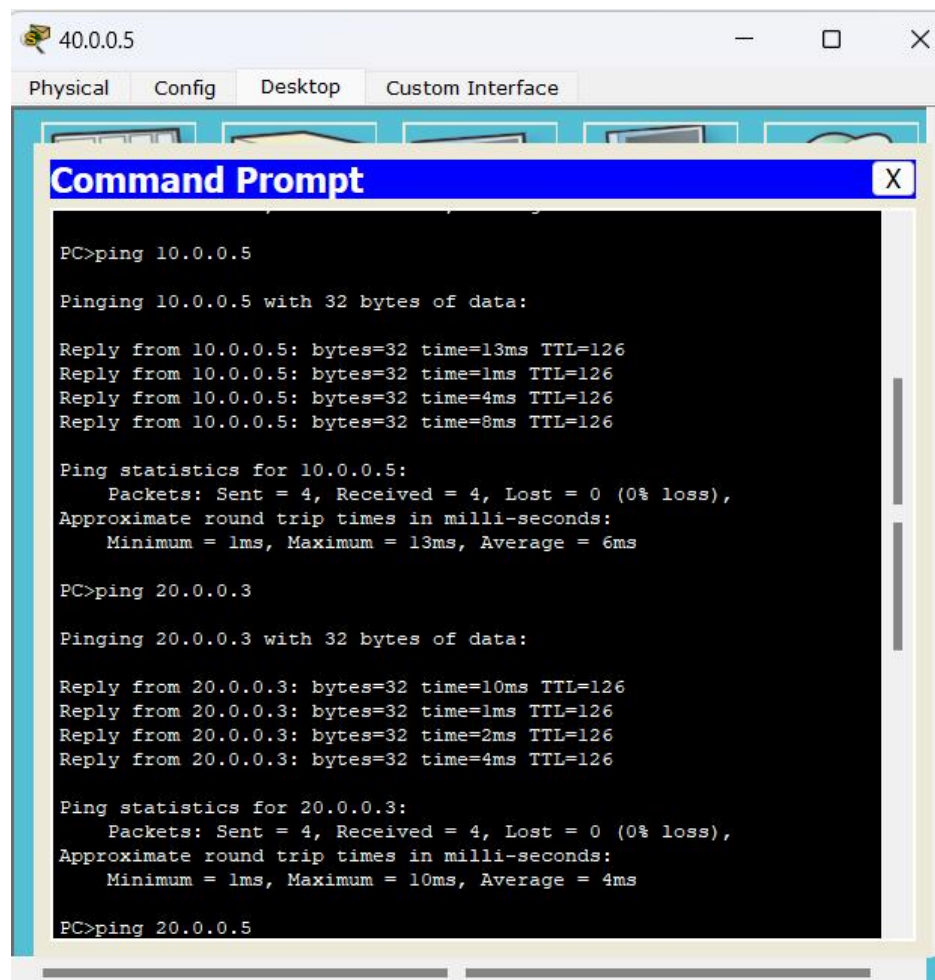
PC>ping 40.0.0.4

Pinging 40.0.0.4 with 32 bytes of data:

Reply from 40.0.0.4: bytes=32 time=0ms TTL=128
Reply from 40.0.0.4: bytes=32 time=0ms TTL=128
Reply from 40.0.0.4: bytes=32 time=0ms TTL=128
Reply from 40.0.0.4: bytes=32 time=2ms TTL=128

Ping statistics for 40.0.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms

PC>
```



```
PC>ping 10.0.0.5

Pinging 10.0.0.5 with 32 bytes of data:

Reply from 10.0.0.5: bytes=32 time=13ms TTL=126
Reply from 10.0.0.5: bytes=32 time=1ms TTL=126
Reply from 10.0.0.5: bytes=32 time=4ms TTL=126
Reply from 10.0.0.5: bytes=32 time=8ms TTL=126

Ping statistics for 10.0.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 13ms, Average = 6ms

PC>ping 20.0.0.3

Pinging 20.0.0.3 with 32 bytes of data:

Reply from 20.0.0.3: bytes=32 time=10ms TTL=126
Reply from 20.0.0.3: bytes=32 time=1ms TTL=126
Reply from 20.0.0.3: bytes=32 time=2ms TTL=126
Reply from 20.0.0.3: bytes=32 time=4ms TTL=126

Ping statistics for 20.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 10ms, Average = 4ms

PC>ping 20.0.0.5
```



