



**MANIPAL**

ACADEMY of HIGHER EDUCATION  
DUBAI CAMPUS

*(Institution of Eminence Deemed to be University)*

**SCHOOL OF ENGINEERING & IT**

**DEPARTMENT OF COMPUTER  
SCIENCE AND ENGINEERING**

Student Name: Rahini Sharma

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Course Name:

Course Code:

# CERTIFICATE

This is to certify that **Ms. Rahini Sharma** Reg. No: **220101051**

Section: **A** Roll No: has satisfactorily completed the LAB EXERCISES

PRESCRIBED FOR COMPUTER NETWORKS LAB (CSE 3143) of Third Year  
B.Tech.

Degree in Computer Science and Engineering at MAHE, Dubai Campus, in  
the Academic Year 2024– 2025.

Date

Signature  
Faculty In Charge

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# Experiment 1

## Cabling Stright & Crossover

Rahini Sharma

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Btech CSE, Section A Batch 2.

27.8.2024

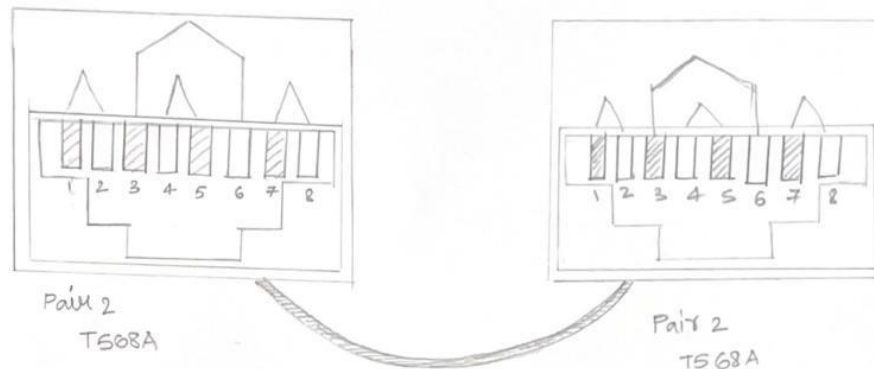
Pair 1: B-BW [4,5] Pair 1: B-BW [4,3]

Pair 2: O-OW [6,3] Pair 2: O-OW [6,3]

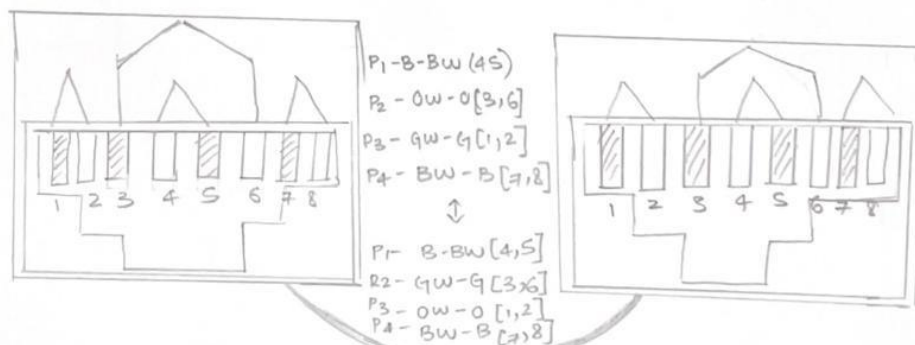
Pair 3: G-GW [2,1] Pair 3: G-GW [2,1]

Pair 4: B-BW [6,7] Pair 4: B-BW [2,7]

Straight through cable



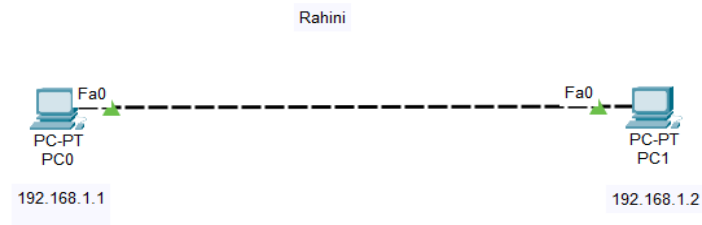
- straight through cables have the same termination at each end - T568A or T568B
- straight through cables are used to connect devices that operate at different layers of the network model (PC to Router, Hub to Router etc)  
(devices of different nature)



- Crossover cables have a T568A termination at one end and a T568B termination at the other end
- Crossover cables are used to link devices of same nature (PC to PC, Router to Router)

## Experiment 2

### PC to PC Connectivity



### PC0 Configuration

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::205:5EFF:FE7E:CB9

### PC1 Configuration

PC1

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.2

Subnet Mask: 255.255.255.0

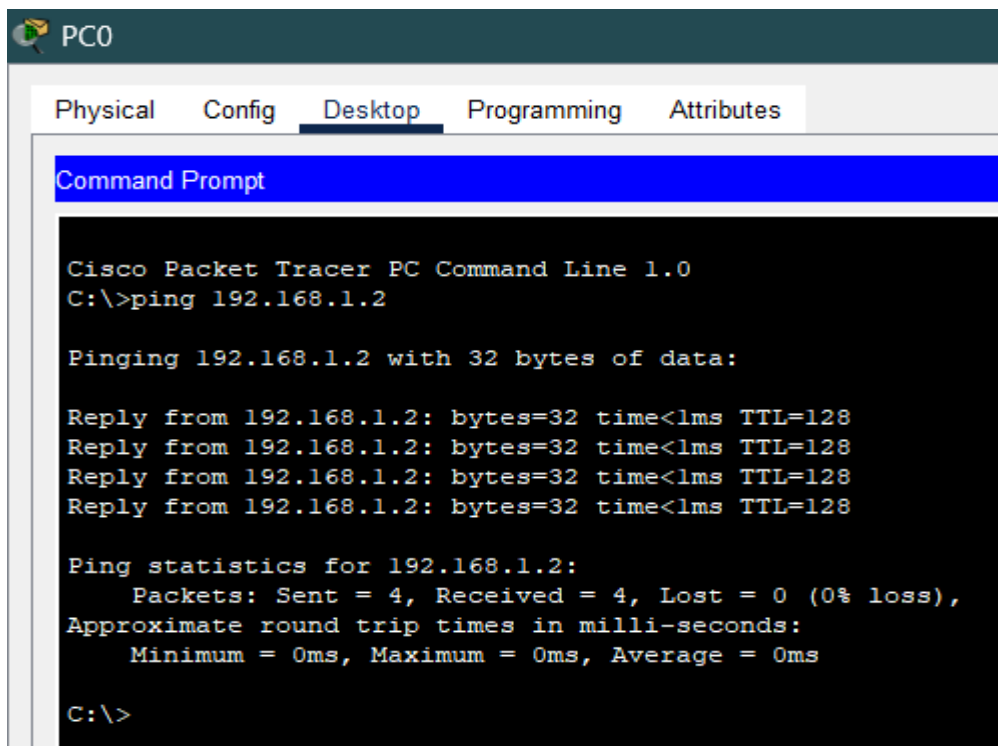
Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

Pinging PC0 to PC1



The screenshot shows the 'PC0' window in Cisco Packet Tracer. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The command prompt shows the execution of the 'ping 192.168.1.2' command, which successfully pings the destination IP address with 32 bytes of data. The output shows four successful replies with a time of less than 1ms and a TTL of 128. The ping statistics indicate that all four packets were sent and received, with 0% loss.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.2

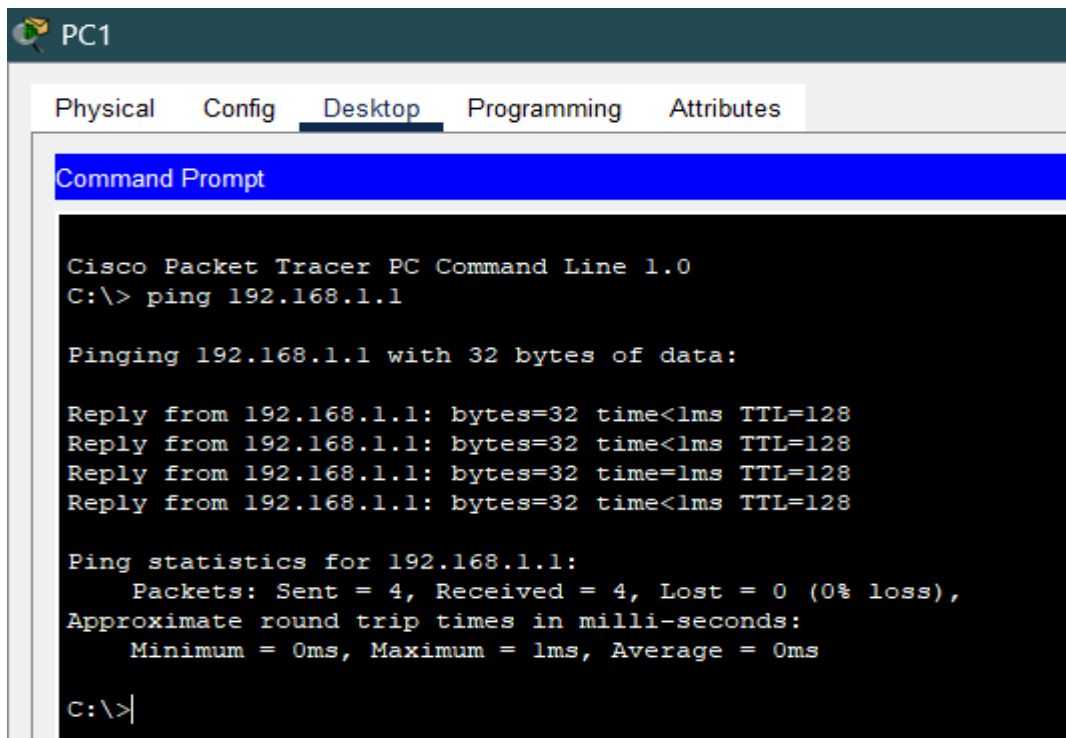
Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Pinging PC1 to PC0



The screenshot shows the 'PC1' window in Cisco Packet Tracer. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The command prompt shows the execution of the 'ping 192.168.1.1' command, which successfully pings the destination IP address with 32 bytes of data. The output shows four successful replies with a time of less than 1ms and a TTL of 128. The ping statistics indicate that all four packets were sent and received, with 0% loss.

```
Cisco Packet Tracer PC Command Line 1.0
C:\> ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

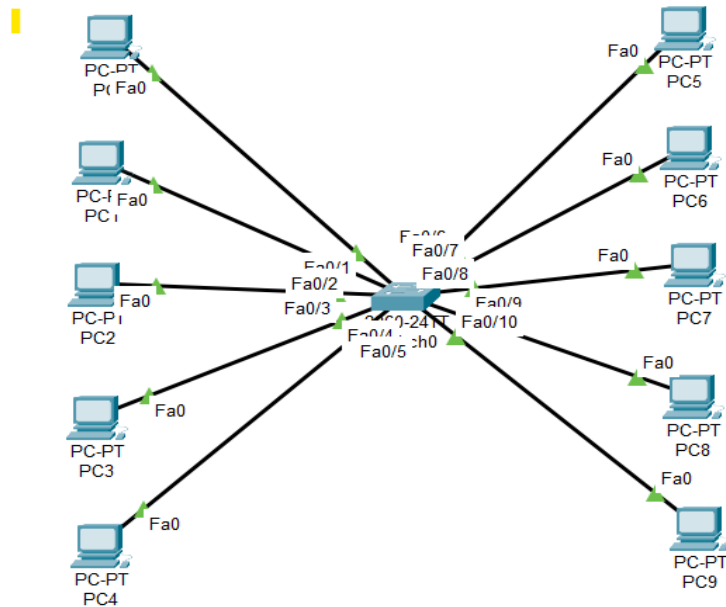
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time=1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128

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 = 1ms, Average = 0ms

C:\>|
```

## Experiment 3

### Multi PC connectivity with Switch



### PC0 Configuration (1<sup>st</sup>)

PC0

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.1

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

### PC9 Configuration (10<sup>th</sup>)

PC9

Physical Config Desktop Programming Attributes

IP Configuration

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.10

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

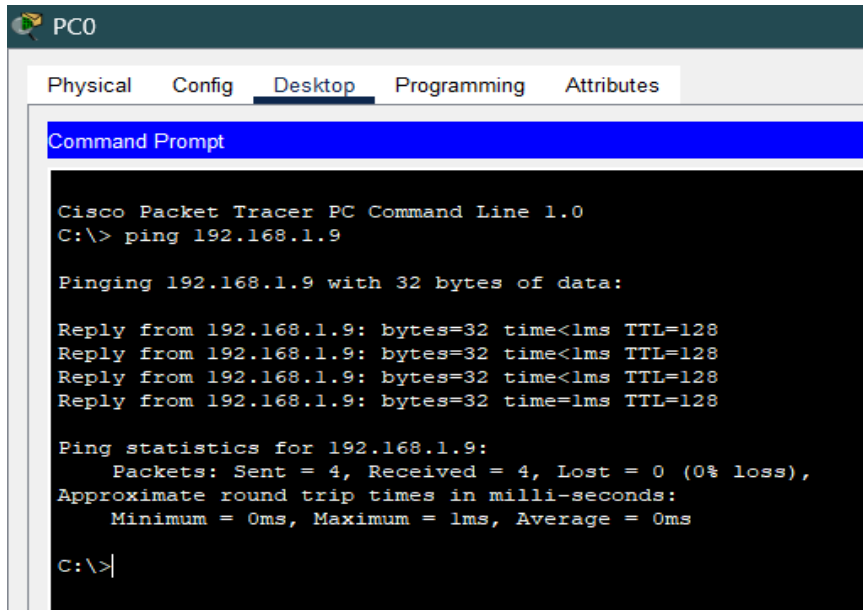
DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static



Pinging PC0 to PC8 (9<sup>th</sup>)



The screenshot shows the 'PC0' window in Cisco Packet Tracer. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The command prompt shows the execution of the command 'ping 192.168.1.9'. The output indicates that the ping was successful, with 4 packets sent and 4 received, resulting in 0% loss. The round trip times are all 0ms.

```
Cisco Packet Tracer PC Command Line 1.0
C:\> ping 192.168.1.9

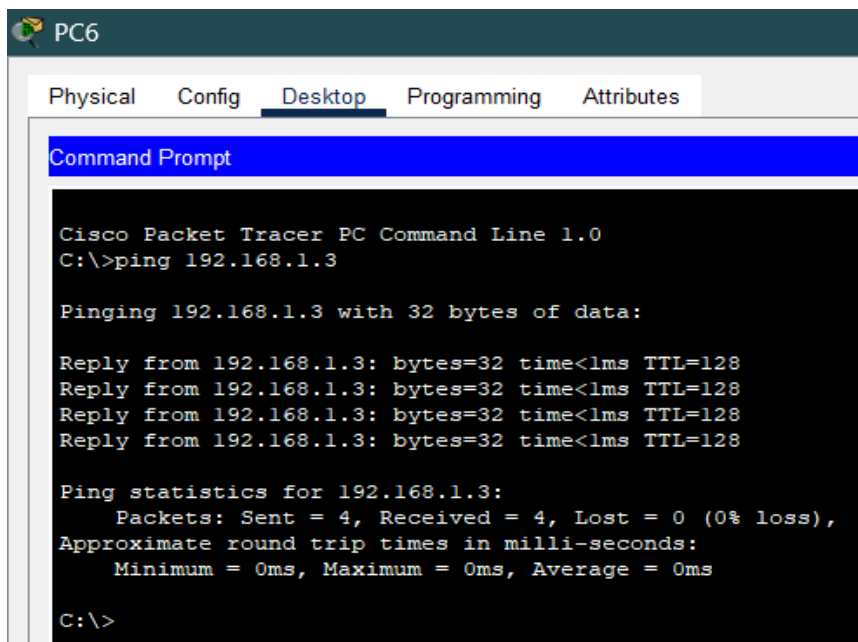
Pinging 192.168.1.9 with 32 bytes of data:

Reply from 192.168.1.9: bytes=32 time<1ms TTL=128
Reply from 192.168.1.9: bytes=32 time<1ms TTL=128
Reply from 192.168.1.9: bytes=32 time<1ms TTL=128
Reply from 192.168.1.9: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.9:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>|
```

Pinging PC6 to PC2 (3<sup>rd</sup>)



The screenshot shows the 'PC6' window in Cisco Packet Tracer. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The command prompt shows the execution of the command 'ping 192.168.1.3'. The output indicates that the ping was successful, with 4 packets sent and 4 received, resulting in 0% loss. The round trip times are all 0ms.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.3

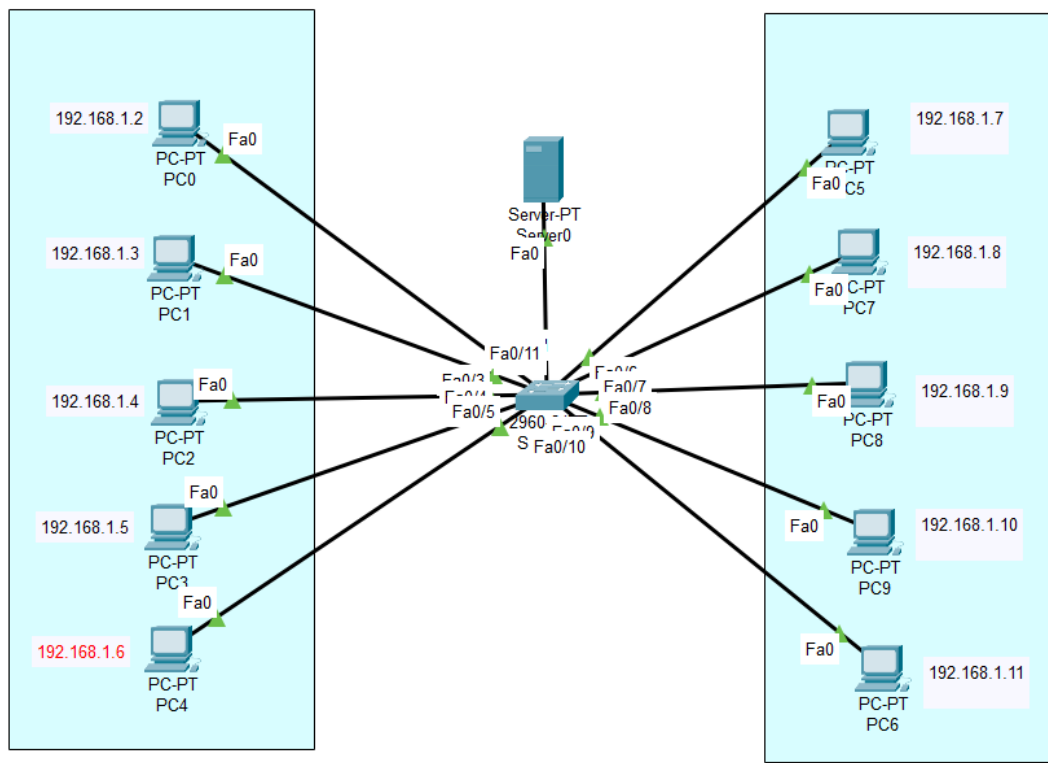
Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

## DHCP:



## Server Configuration

Server0

Physical Config Services **Desktop** Programming Attributes

**IP Configuration**

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration

## Server Services Configuration

Server0

Physical Config **Services** Desktop Programming Attributes

**SERVICES**

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

**DHCP**

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: serverPool

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

Start IP Address: 192.168.1.0

Subnet Mask: 255.255.255.0

Maximum Number of Users: 512

TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
Rahini	0.0.0.0	0.0.0.0	192.168.1.2	255.255.255.0	30	0.0.0.0	0.0.0.0
serverPool	0.0.0.0	0.0.0.0	192.168.1.0	255.255.255.0	512	0.0.0.0	0.0.0.0

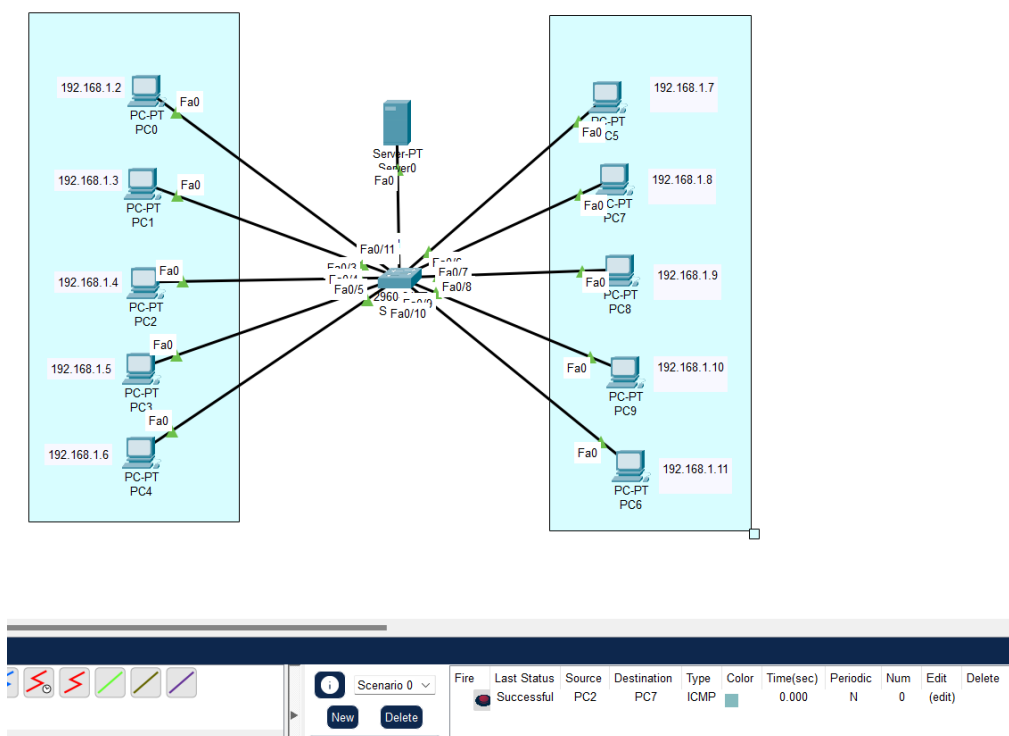
## PC1 Configuration

Physical		Config	Desktop	Programming	Attributes
IP Configuration					
Interface FastEthernet0					
IP Configuration					
<input checked="" type="radio"/> DHCP		<input type="radio"/> Static			
IPv4 Address		192.168.1.2			
Subnet Mask		255.255.255.0			
Default Gateway		0.0.0.0			
DNS Server		0.0.0.0			
IPv6 Configuration					
<input type="radio"/> Automatic		<input checked="" type="radio"/> Static			
IPv6 Address					

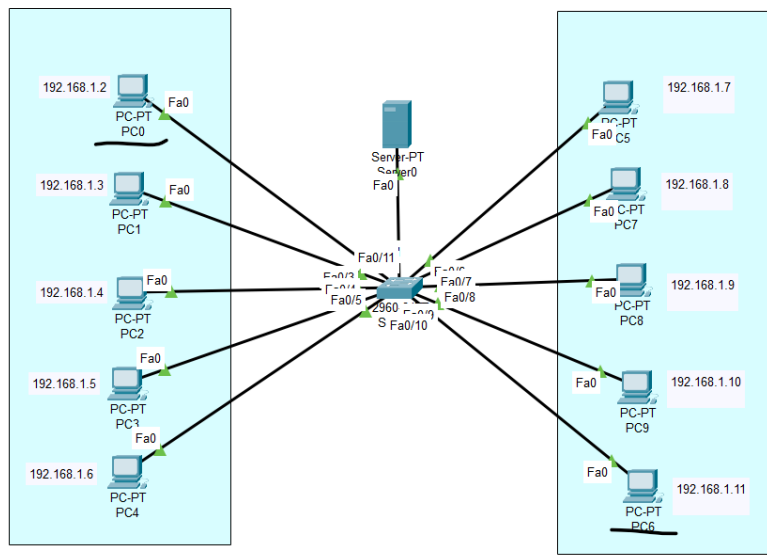
## PC10 Configuration

Physical		Config	Desktop	Programming	Attributes
IP Configuration					
Interface FastEthernet0					
IP Configuration					
<input checked="" type="radio"/> DHCP		<input type="radio"/> Static			
IPv4 Address		192.168.1.11			
Subnet Mask		255.255.255.0			
Default Gateway		0.0.0.0			
DNS Server		0.0.0.0			
IPv6 Configuration					
<input type="radio"/> Automatic		<input checked="" type="radio"/> Static			
IPv6 Address					

## Real-Time (PC2 to PC7)



## Real-Time (PC6 to PC0)



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	D
	Successful	PC2	PC7	ICMP		0.000	N	0	(edit)	
	Successful	PC6	PC0	ICMP		0.000	N	1	(edit)	

## Pinging PC8 to PC6 (8<sup>th</sup> pc to 10<sup>th</sup> pc)

```

Physical  Config  Desktop  Programming  Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.11

Pinging 192.168.1.11 with 32 bytes of data:

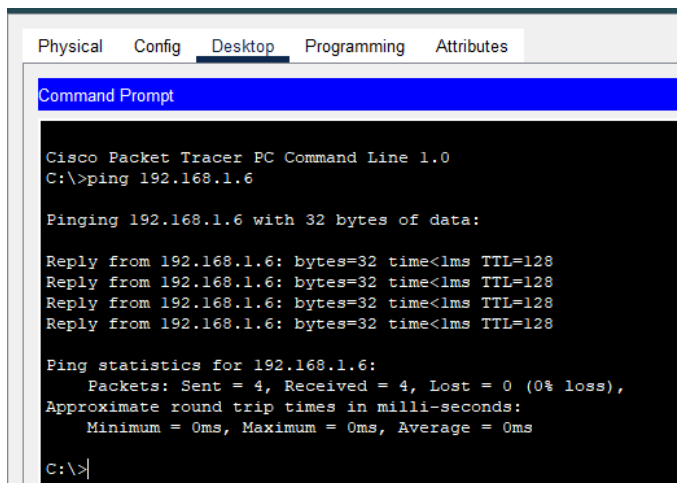
Reply from 192.168.1.11: bytes=32 time<1ms TTL=128
Reply from 192.168.1.11: bytes=32 time<1ms TTL=128
Reply from 192.168.1.11: bytes=32 time<1ms TTL=128
Reply from 192.168.1.11: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>

```

Pinging PC1 to PC4 (2<sup>nd</sup> pc to 5<sup>th</sup> pc)



The screenshot shows the Cisco Packet Tracer interface with the 'Desktop' tab selected. A Command Prompt window is open, displaying the results of a ping command from PC1 to PC4 (192.168.1.6). The output shows four successful replies with 0% loss.

```
Physical  Config  Desktop  Programming  Attributes

Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.6

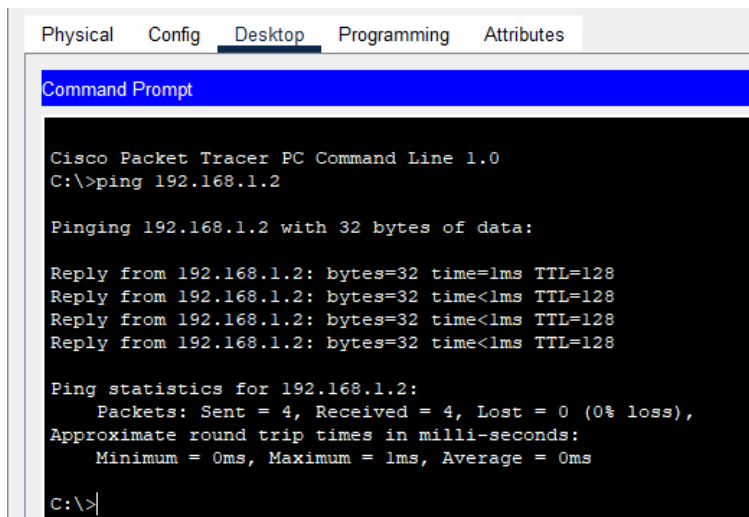
Pinging 192.168.1.6 with 32 bytes of data:

Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>|
```

Pinging PC7 To PC1



The screenshot shows the Cisco Packet Tracer interface with the 'Desktop' tab selected. A Command Prompt window is open, displaying the results of a ping command from PC7 to PC1 (192.168.1.2). The output shows four successful replies with 0% loss.

```
Physical  Config  Desktop  Programming  Attributes

Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

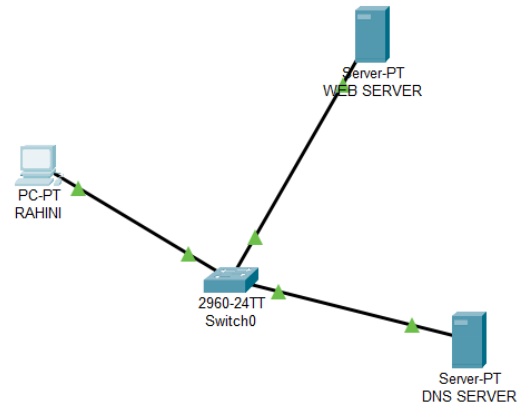
Reply from 192.168.1.2: bytes=32 time=1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>|
```

## Experiment 6

Setting up a Web server and accessing it by IP address and by a DNS server



### DNS Server Configuration

The screenshot shows the 'DNS SERVER' configuration window with the 'Config' tab selected. The left sidebar has 'GLOBAL' selected under 'Settings'. The main area is titled 'Global Settings' and contains the following fields:

- Display Name: DNS SERVER
- Gateway/DNS IPv4:
  - ☐ DHCP
  - ☒ Static
  - Default Gateway: [empty field]
  - DNS Server: 192.168.1.1
- Gateway/DNS IPv6:
  - ☐ Automatic
  - ☒ Static
  - Default Gateway: [empty field]
  - DNS Server: [empty field]

The screenshot shows the 'DNS SERVER' configuration window with the 'Config' tab selected. The left sidebar has 'INTERFACE' selected under 'FastEthernet0'. The main area is titled 'FastEthernet0' and contains the following fields:

- Port Status: ☒ On
- Bandwidth: ☒ 100 Mbps, ☐ 10 Mbps
- Duplex: ☐ Half Duplex, ☒ Full Duplex
- MAC Address: 0002.4AA8.3009
- IP Configuration:
  - ☐ DHCP
  - ☒ Static
  - IPv4 Address: 192.168.1.1
  - Subnet Mask: 255.255.255.0
- IPv6 Configuration:
  - ☐ Automatic
  - ☒ Static
  - IPv6 Address: [empty field]
  - Link Local Address: FE80::202:4AFF:FEA8:3009

## Web Server Configuration

WEB SERVER

Physical **Config** Services Desktop Programming Attributes

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

Global Settings

Display Name: WEB SERVER

Gateway/DNS IPv4

☐ DHCP

☒ Static

Default Gateway:

DNS Server: 192.168.1.2

Gateway/DNS IPv6

☐ Automatic

☒ Static

Default Gateway:

DNS Server:

WEB SERVER

Physical **Config** Services Desktop Programming Attributes

**GLOBAL**

Settings

Algorithm Settings

**INTERFACE**

FastEthernet0

FastEthernet0

Port Status: ☒ On

Bandwidth: ☒ 100 Mbps ☐ 10 Mbps ☒ Auto

Duplex: ☐ Half Duplex ☒ Full Duplex ☒ Auto

MAC Address: 0005.5E54.CB92

IP Configuration

☐ DHCP

☒ Static

IPv4 Address: 192.168.1.2

Subnet Mask: 255.255.255.0

IPv6 Configuration

☐ Automatic

☒ Static

IPv6 Address:

Link Local Address: FE80::205:5EFF:FE54:CB92

WEB SERVER

Physical Config **Services** Desktop Programming Attributes

**SERVICES**

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

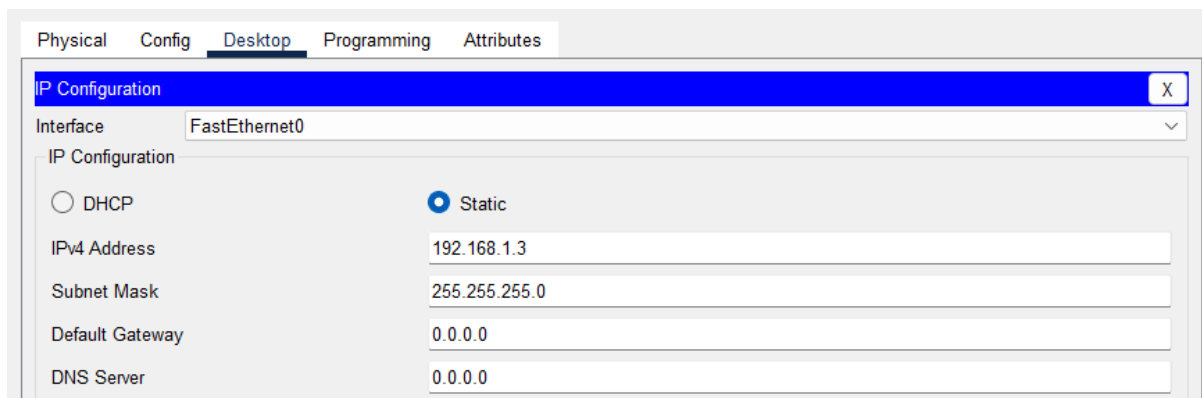
VM Management

Radius EAP

File Name: index.html

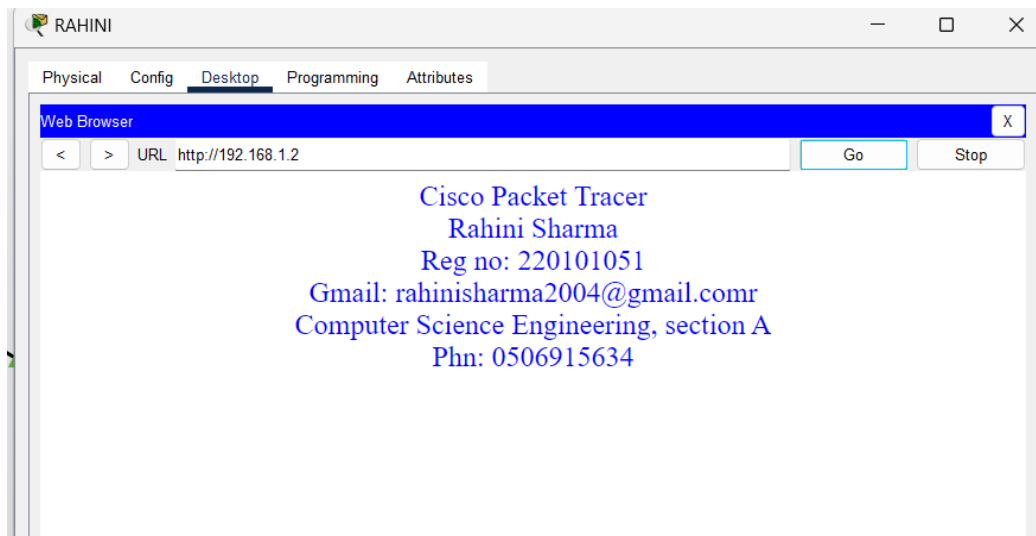
```
<html>
<center><font size="+2" color="blue">Cisco Packet Tracer</font></center>
<center><font size="+2" color="blue">Rahini Sharma</font></center>
<center><font size="+2" color="blue">Reg no: 220101051</font></center>
<center><font size="+2" color="blue">Gmail: rahinisharma2004@gmail.com</font></center>
<center><font size="+2" color="blue">Computer Science Engineering, section A</font></center>
<center><font size="+2" color="blue">Phn: 0506915634</font></center>
</html>
```

## PC Configuration



The screenshot shows the 'IP Configuration' window for the 'FastEthernet0' interface. The 'Static' option is selected for IP configuration. The fields are filled with the following values:

Field	Value
Interface	FastEthernet0
IP Configuration	<input type="radio"/> DHCP <input checked="" type="radio"/> Static
IPv4 Address	192.168.1.3
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0



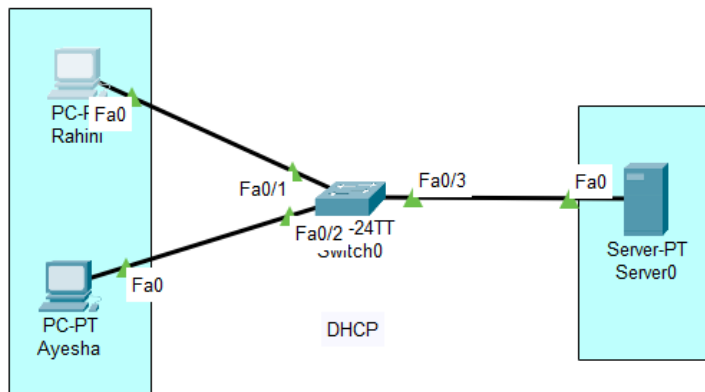
The screenshot shows the 'Web Browser' window with the URL 'http://192.168.1.2' entered in the address bar. The 'Go' button is highlighted. The main content area displays the following text:

Cisco Packet Tracer  
Rahini Sharma  
Reg no: 220101051  
Gmail: rahinisharma2004@gmail.comr  
Computer Science Engineering, section A  
Phn: 0506915634



## Experiment 7

### DHCP using Server



### Server IP Configuration

Server0

Physical Config Services **Desktop** Programming Attributes

**IP Configuration**

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

### Server Services Configuration

Server0

Physical Config **Services** Desktop Programming Attributes

**SERVICES**

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

**DHCP**

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: Rahini

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

Start IP Address: 192 168 1 2

Subnet Mask: 255 255 255 0

Maximum Number of Users: 30


TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
Rahini	0.0.0.0	0.0.0.0	192.168.1.2	255.255.255.0	30	0.0.0.0	0.0.0.0
serverPool	0.0.0.0	0.0.0.0	192.168.1.0	255.255.255.0	512	0.0.0.0	0.0.0.0

## PC1 Configuration

 Rahini

Physical Config **Desktop** Programming Attributes

**IP Configuration**

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static


IPv4 Address 192.168.1.2

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

## PC2 Configuration

 Ayesha

Physical Config **Desktop** Programming Attributes

**IP Configuration**

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.3

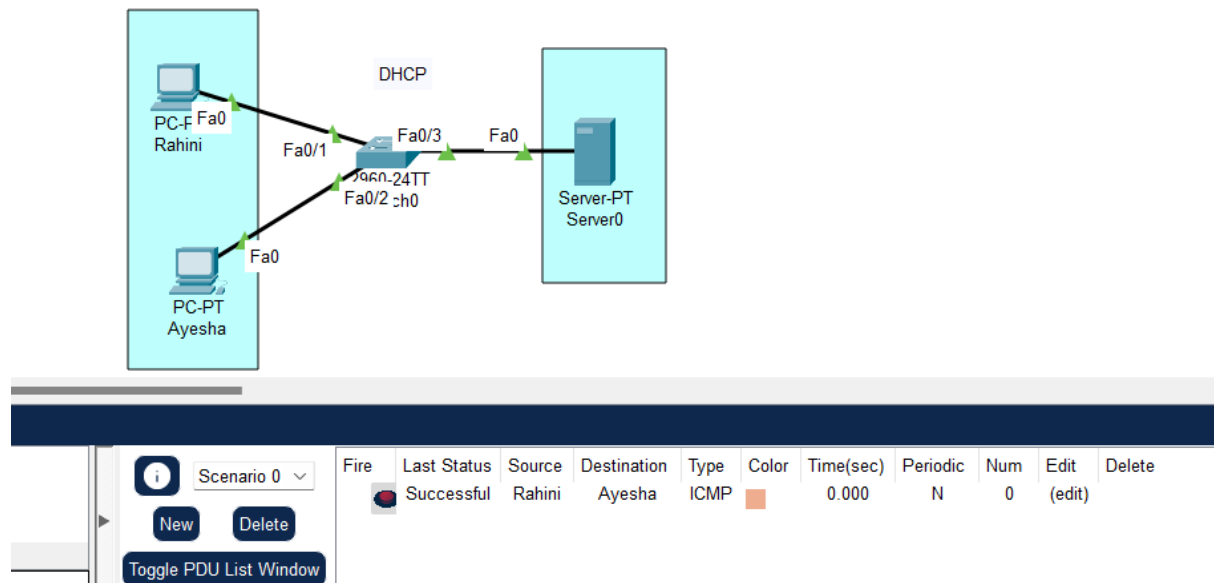
Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

IPv6 Configuration

## Real-Time Packet Transfer



## Pinging PC2 to PC1

```
Physical  Config  Desktop  Programming  Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

## Pinging PC1 to PC2

```
Physical  Config  Desktop  Programming  Attributes
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>PING 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

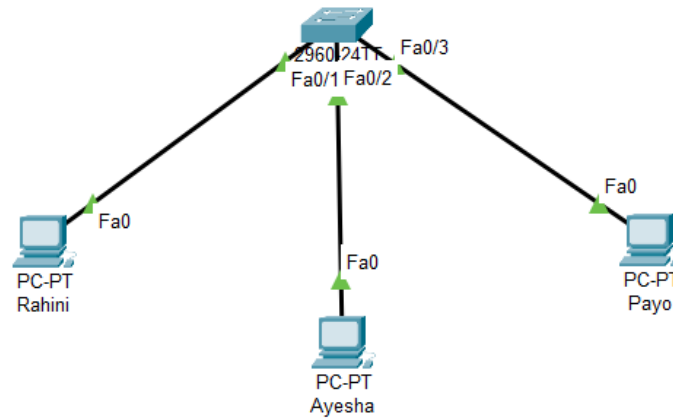
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time=1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>
```

## Experiment 9

### Study on Switch Learning Process using packet tracer tools



#### PC0 Configuration

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.60.1

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

#### PC1 Configuration

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

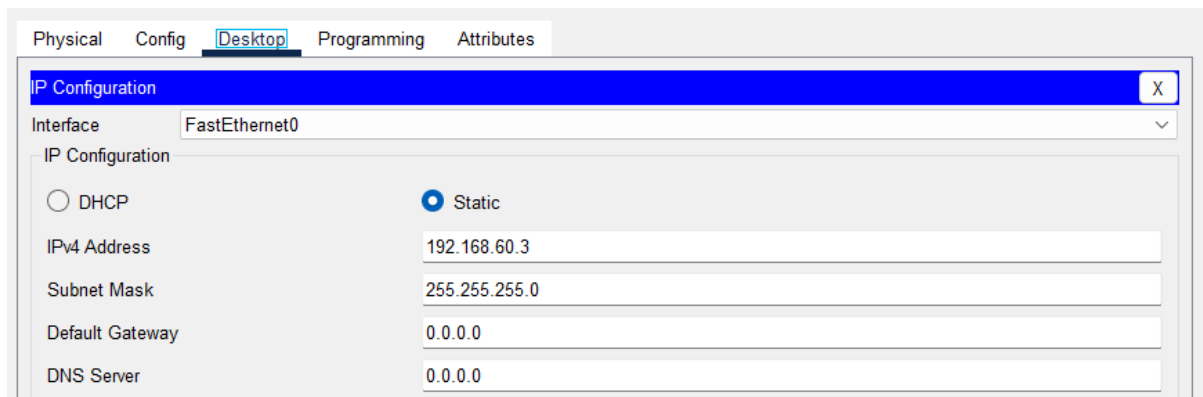
IPv4 Address: 192.168.60.2

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

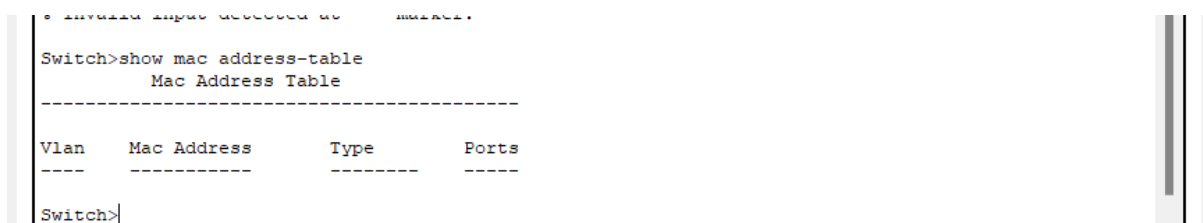
## PC2 Configuration



The screenshot shows the 'Desktop' tab of the PC2 Configuration window. The 'Interface' dropdown is set to 'FastEthernet0'. Under the 'IP Configuration' section, the 'Static' radio button is selected. The fields are filled with the following values:

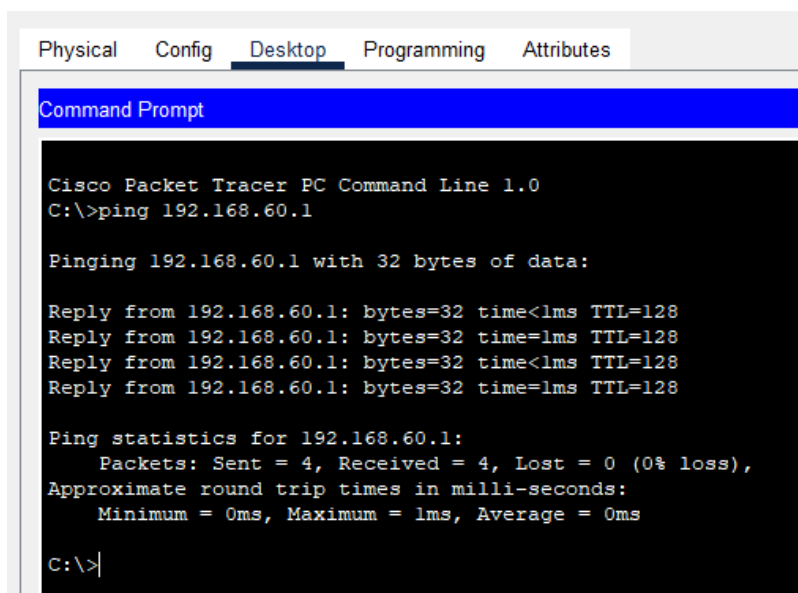
Field	Value
IPv4 Address	192.168.60.3
Subnet Mask	255.255.255.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

## Before Pinging



```
Switch>show mac address-table
Mac Address Table
-----
Vlan    Mac Address      Type      Ports
----    -
Switch>
```

## Pinging ayesha to PC rahini



```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.60.1

Pinging 192.168.60.1 with 32 bytes of data:

Reply from 192.168.60.1: bytes=32 time<1ms TTL=128
Reply from 192.168.60.1: bytes=32 time=1ms TTL=128
Reply from 192.168.60.1: bytes=32 time<1ms TTL=128
Reply from 192.168.60.1: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.60.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

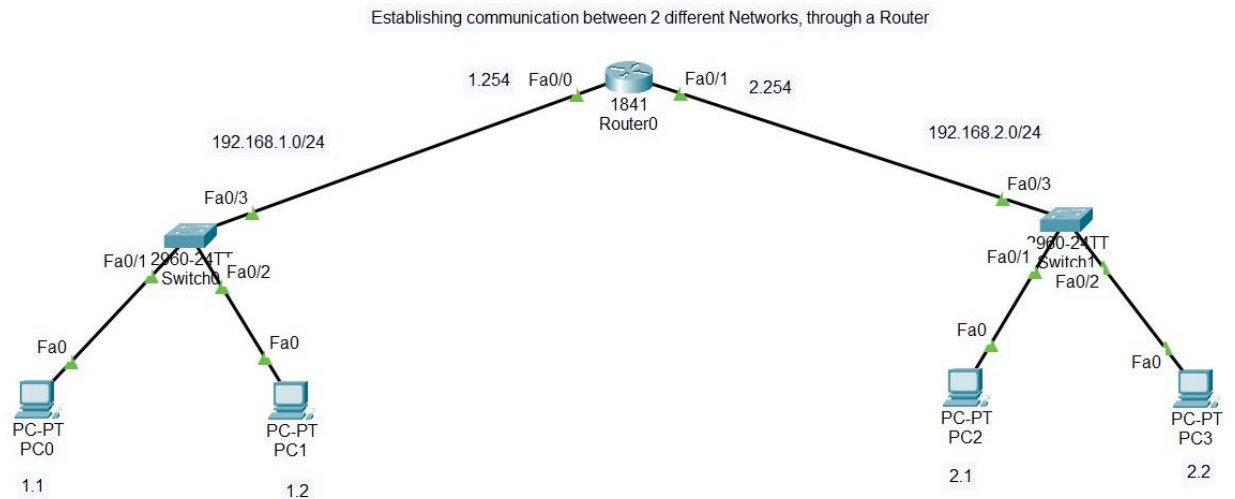
C:\>
```

## Table after pinging the PC's

```
Switch>show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type    Ports
----    -
1       0002.4a65.0b5a   DYNAMIC Fa0/2
1       0002.4aa9.4321   DYNAMIC Fa0/1
Switch>
```

## Experiment 10

Create a network using one router and establishing the communication between two different networks



Pinging a PC of network 192.168.2.0/24 from a PC of network 192.168.1.0/24 and displaying that there is active communication as we receive a reply from the other PC

```
PC1
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time<1ms TTL=127
Reply from 192.168.2.1: bytes=32 time<1ms TTL=127
Reply from 192.168.2.1: bytes=32 time<1ms TTL=127
Reply from 192.168.2.1: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

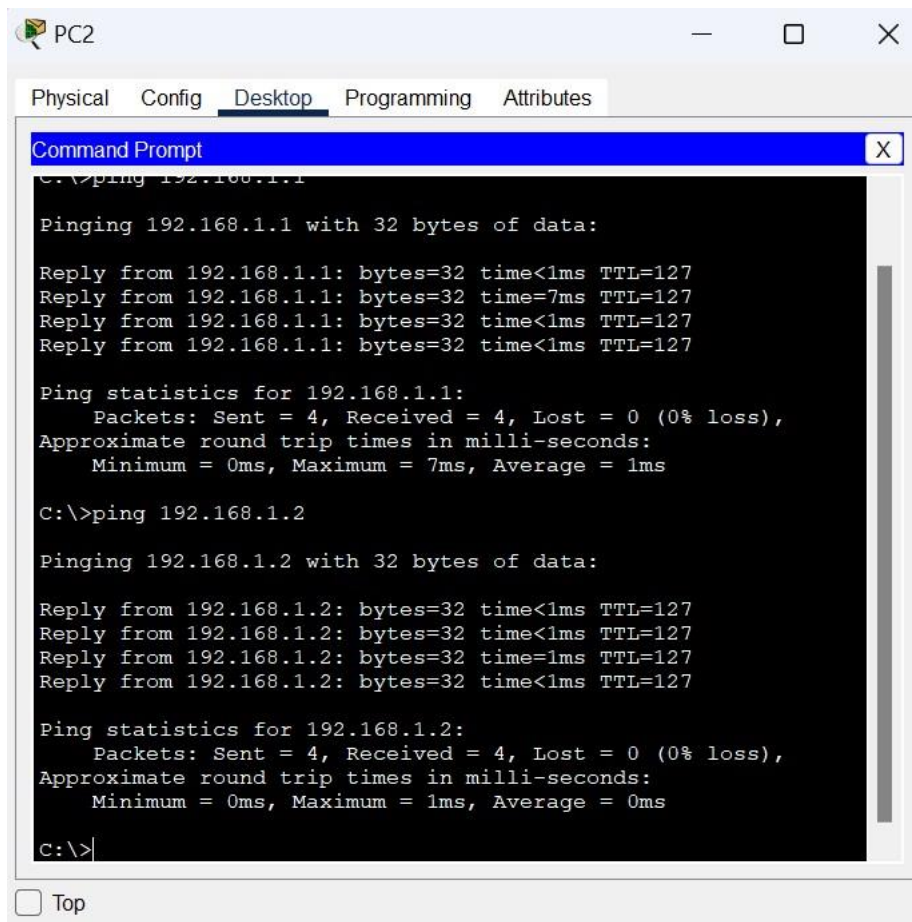
C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.2: bytes=32 time<1ms TTL=127
Reply from 192.168.2.2: bytes=32 time<1ms TTL=127
Reply from 192.168.2.2: bytes=32 time<1ms TTL=127

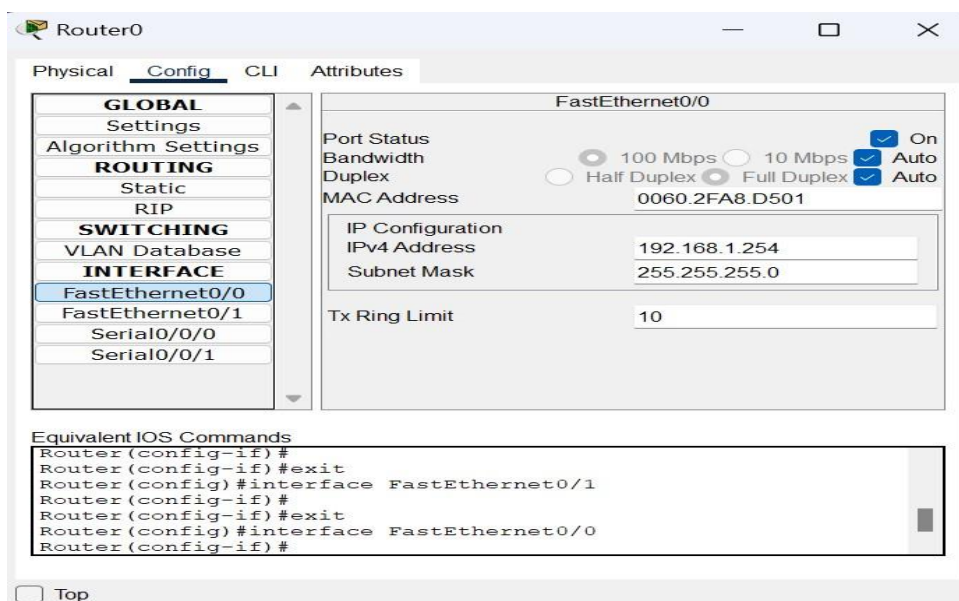
Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
```

Pinging a PC of the network 192.168.1.0/24 from a PC of the network 192.168.2.0/24, and displaying that there is active communication as we are receiving a reply from the PC:



Router Information through which both the networks are interconnected:

Left side of the router, consisting of the default gateway of the 192.168.1.0/24 network





Right side of the router, consisting of the default gateway of the 192.168.2.0/24 network.

Router0

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Serial0/0/0

Serial0/0/1

FastEthernet0/1

Port Status

Bandwidth

Duplex

MAC Address

IP Configuration

IPv4 Address

Subnet Mask

Tx Ring Limit

100 Mbps

10 Mbps

Half Duplex

Full Duplex

0060.2FA8.D502

192.168.2.254

255.255.255.0

10

On

Auto

Auto

Equivalent IOS Commands

Router(config-if)#

Router(config-if)#exit

Router(config)#interface FastEthernet0/0

Router(config-if)#

Router(config-if)#exit

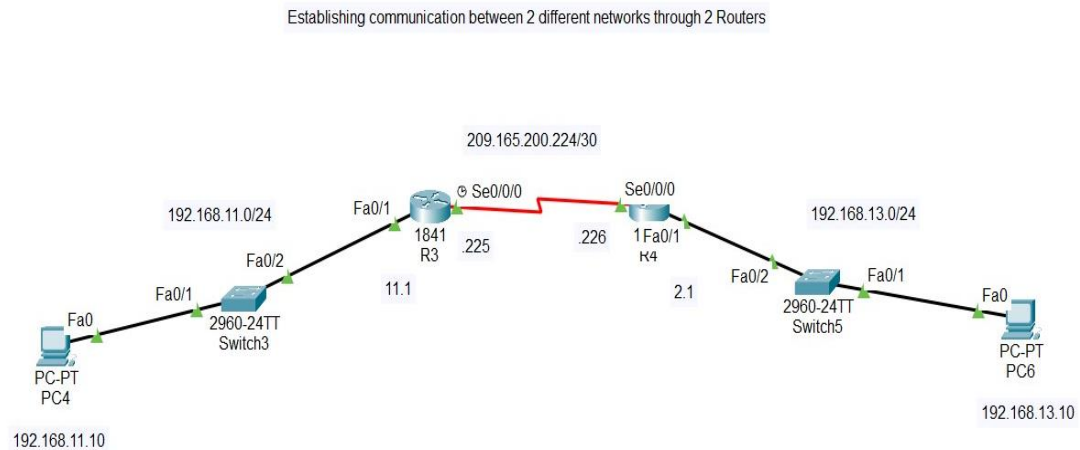
Router(config)#interface FastEthernet0/1

Router(config-if)#

Top

## Experiment 11

Create a network using two routers and establishing the communication between two different networks



Router Information, showing all the routes that are interconnected, through the respective routers

### Router R3

```
Router R3
Physical Config CLI Attributes
IOS Command Line Interface

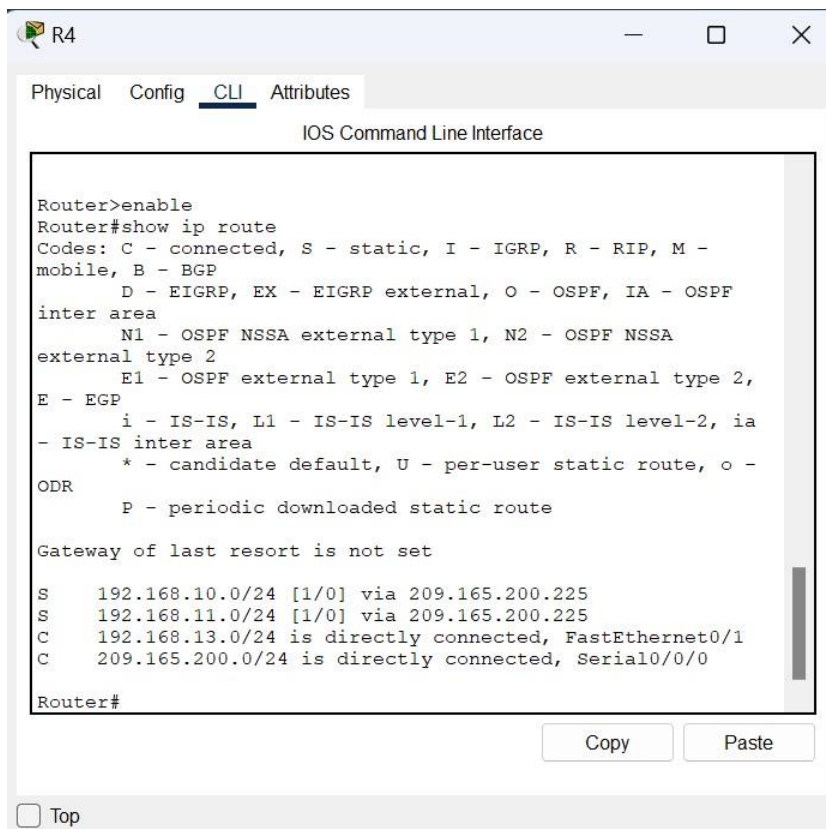
Router>enable
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external 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

C    192.168.11.0/24 is directly connected, FastEthernet0/1
S    192.168.12.0/24 [1/0] via 209.165.200.226
S    192.168.13.0/24 [1/0] via 209.165.200.226
C    209.165.200.0/24 is directly connected, Serial0/0/0

Router#
```

## Router R4



The screenshot shows the CLI of Router R4. The user has entered 'enable' to get into privileged mode, then 'show ip route' to display the routing table. The output lists the routing codes, the gateway of last resort (not set), and the routes for 192.168.10.0/24, 192.168.11.0/24, 192.168.13.0/24, and 209.165.200.0/24.

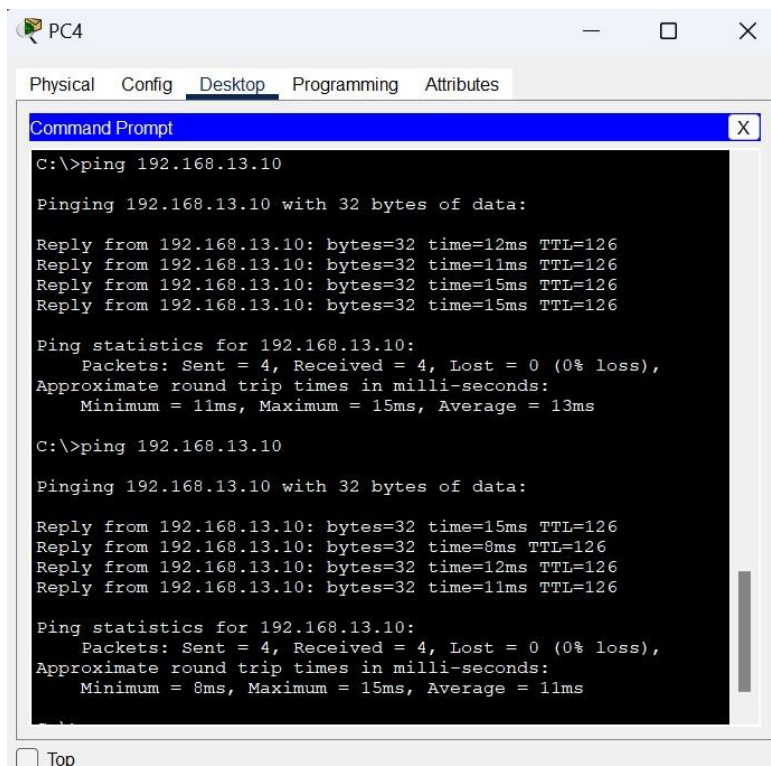
```
Router>enable
Router#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M -
mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF
inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA
external type 2
       E1 - OSPF external type 1, E2 - OSPF external 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

S    192.168.10.0/24 [1/0] via 209.165.200.225
S    192.168.11.0/24 [1/0] via 209.165.200.225
C    192.168.13.0/24 is directly connected, FastEthernet0/1
C    209.165.200.0/24 is directly connected, Serial0/0/0

Router#
```

Pinging a PC of network 192.168.13.0/24 from a PC of the network 192.168.11.0/24 and displaying that there is active communication as we are receiving a reply from the PC.



The screenshot shows the Command Prompt on PC4. The user has entered 'ping 192.168.13.10'. The output shows four successful replies with varying round trip times (12ms, 11ms, 15ms, 15ms) and TTL=126. Ping statistics show 4 packets sent, 4 received, and 0% loss.

```
C:\>ping 192.168.13.10

Pinging 192.168.13.10 with 32 bytes of data:

Reply from 192.168.13.10: bytes=32 time=12ms TTL=126
Reply from 192.168.13.10: bytes=32 time=11ms TTL=126
Reply from 192.168.13.10: bytes=32 time=15ms TTL=126
Reply from 192.168.13.10: bytes=32 time=15ms TTL=126

Ping statistics for 192.168.13.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 15ms, Average = 13ms

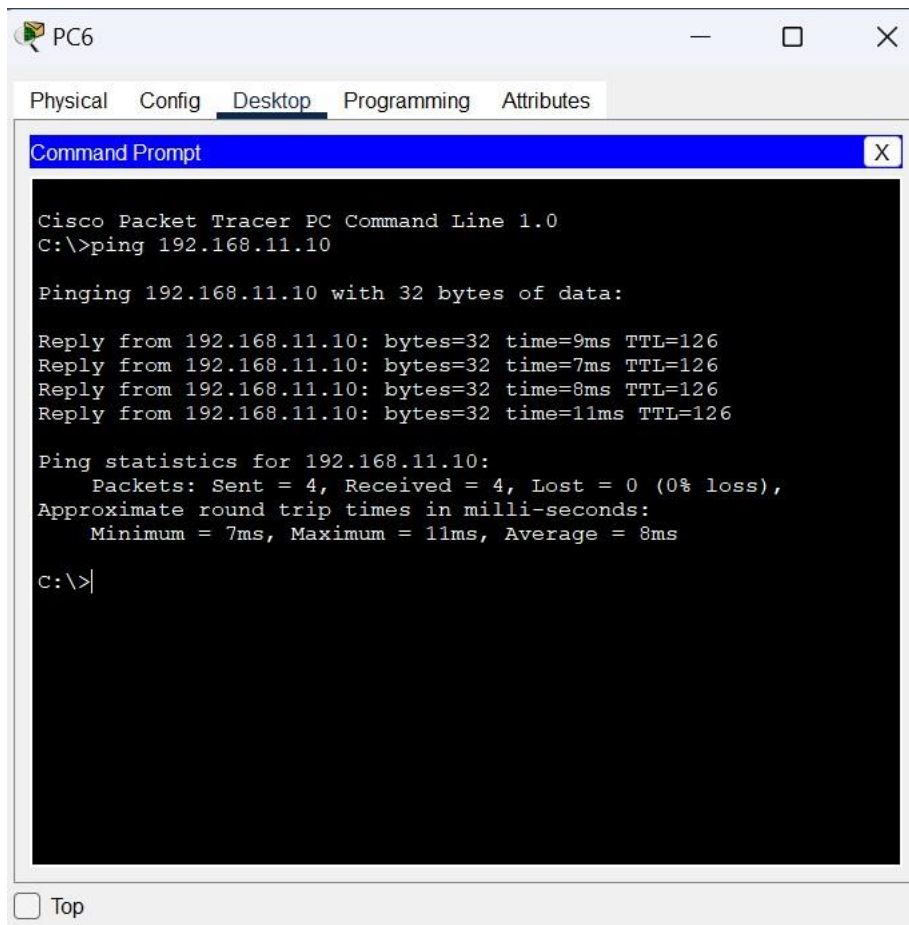
C:\>ping 192.168.13.10

Pinging 192.168.13.10 with 32 bytes of data:

Reply from 192.168.13.10: bytes=32 time=15ms TTL=126
Reply from 192.168.13.10: bytes=32 time=8ms TTL=126
Reply from 192.168.13.10: bytes=32 time=12ms TTL=126
Reply from 192.168.13.10: bytes=32 time=11ms TTL=126

Ping statistics for 192.168.13.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 8ms, Maximum = 15ms, Average = 11ms
```

Pinging a PC of the network 192.168.11.0/24 from a PC of the network 192.168.13.0/24, and displaying that there is active communication as we are receiving a reply from the other PC.



The screenshot shows a window titled "PC6" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Command Prompt" window. The command prompt shows the execution of a ping command to 192.168.11.10, resulting in four successful replies with varying round-trip times and a 0% loss rate.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.11.10

Pinging 192.168.11.10 with 32 bytes of data:

Reply from 192.168.11.10: bytes=32 time=9ms TTL=126
Reply from 192.168.11.10: bytes=32 time=7ms TTL=126
Reply from 192.168.11.10: bytes=32 time=8ms TTL=126
Reply from 192.168.11.10: bytes=32 time=11ms TTL=126

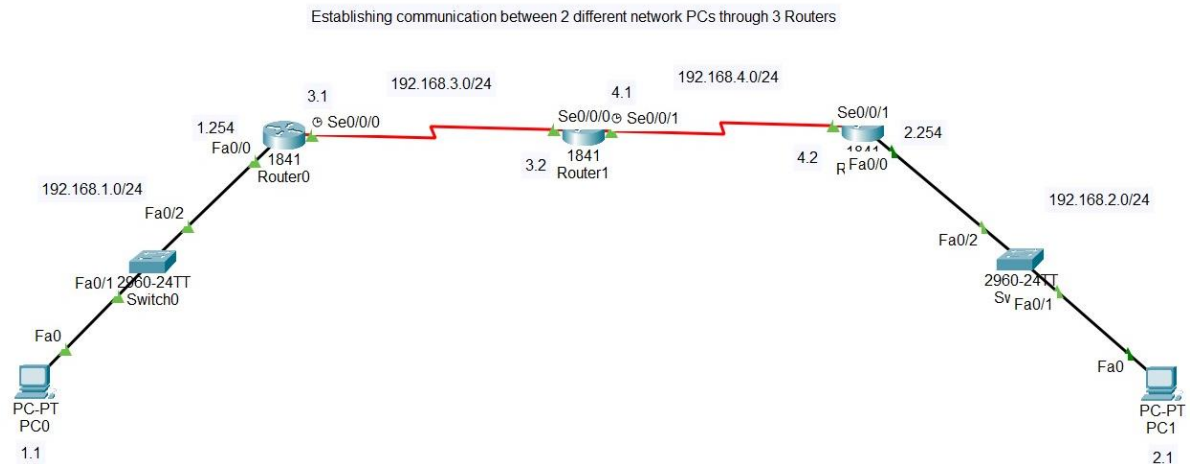
Ping statistics for 192.168.11.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 11ms, Average = 8ms

C:\>|
```

☐ Top

## Experiment 12

Create a network using three routers and establish the communication between two different networks (PCs); use static router to establish the routing and study the routing table. Use 'tracert' command to analyse the route of communication.



Pinging a PC of the network 192.168.2.0/24 from a PC of the network 192.168.1.0/24 and displaying that there is active communication as we are receiving a reply from the other PC.

```
PC0
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.1: bytes=32 time=14ms TTL=125
Reply from 192.168.2.1: bytes=32 time=18ms TTL=125
Reply from 192.168.2.1: bytes=32 time=19ms TTL=125

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 19ms, Average = 17ms

C:\>ping 192.168.2.1

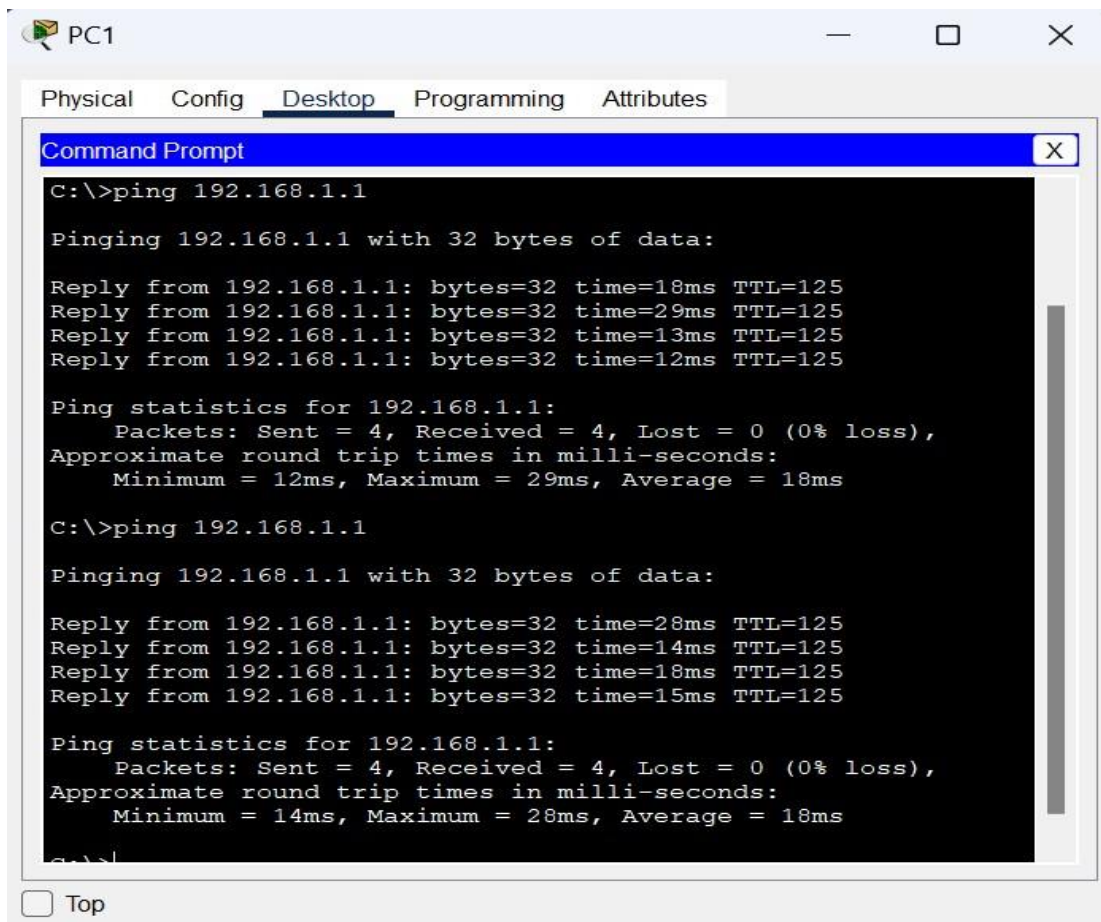
Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=29ms TTL=125
Reply from 192.168.2.1: bytes=32 time=16ms TTL=125
Reply from 192.168.2.1: bytes=32 time=28ms TTL=125
Reply from 192.168.2.1: bytes=32 time=23ms TTL=125

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 16ms, Maximum = 29ms, Average = 24ms
```

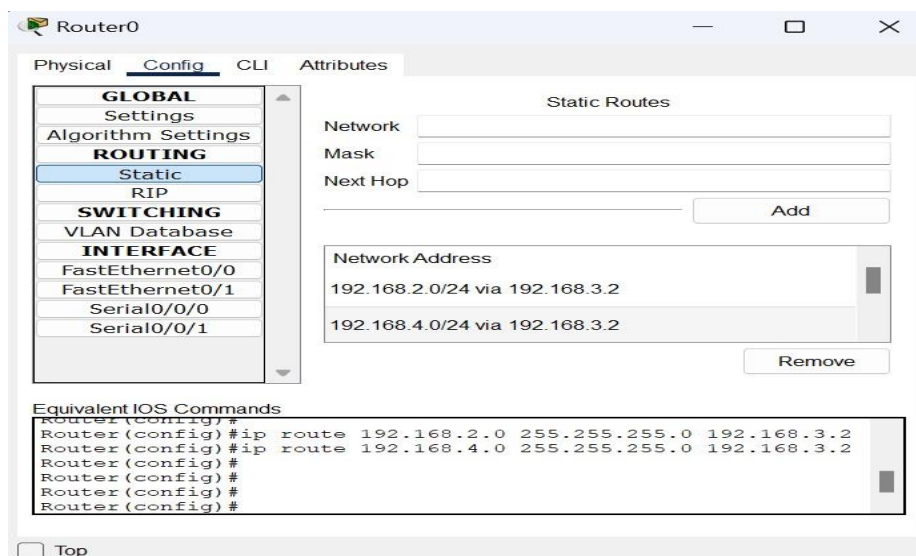
Pinging a PC of the network 192.168.1.0/24 from a PC of the network 192.168.2.0/24, and displaying that there is active communication as we are receiving a reply from the other PC.





The Routing Tables of all the 3 Routers, consisting of the destination networks connected and the Next Hop address to reach to that network.

R0



R1

The screenshot shows the configuration window for Router1. The 'Config' tab is active, and the 'Static Routes' section is selected in the left sidebar. The 'Static Routes' section has three input fields: 'Network', 'Mask', and 'Next Hop'. Below these fields is an 'Add' button. A list of configured static routes is shown below the 'Add' button, with a 'Remove' button at the bottom right. The list contains two entries: '192.168.1.0/24 via 192.168.3.1' and '192.168.2.0/24 via 192.168.4.2'. At the bottom, there is a section for 'Equivalent IOS Commands' showing the following commands: 'Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.3.1', 'Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.4.2', and several empty lines for additional commands. A 'Top' button is located at the bottom left.

Router1

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Serial0/0/0

Serial0/0/1

Static Routes

Network

Mask

Next Hop

Add

Network Address

192.168.1.0/24 via 192.168.3.1

192.168.2.0/24 via 192.168.4.2

Remove

Equivalent IOS Commands

```
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.3.1
Router(config)#ip route 192.168.2.0 255.255.255.0 192.168.4.2
Router(config)#
Router(config)#
Router(config)#
Router(config)#
Router(config)#
```

Top

R2

The screenshot shows the configuration window for Router2. The 'Config' tab is active, and the 'Static Routes' section is selected in the left sidebar. The 'Static Routes' section has three input fields: 'Network', 'Mask', and 'Next Hop'. Below these fields is an 'Add' button. A list of configured static routes is shown below the 'Add' button, with a 'Remove' button at the bottom right. The list contains two entries: '192.168.1.0/24 via 192.168.4.1' and '192.168.3.0/24 via 192.168.4.1'. At the bottom, there is a section for 'Equivalent IOS Commands' showing the following commands: 'Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.4.1', 'Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.4.1', and several empty lines for additional commands.

Router2

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

FastEthernet0/0

FastEthernet0/1

Serial0/0/0

Serial0/0/1

Static Routes

Network

Mask

Next Hop

Add

Network Address

192.168.1.0/24 via 192.168.4.1

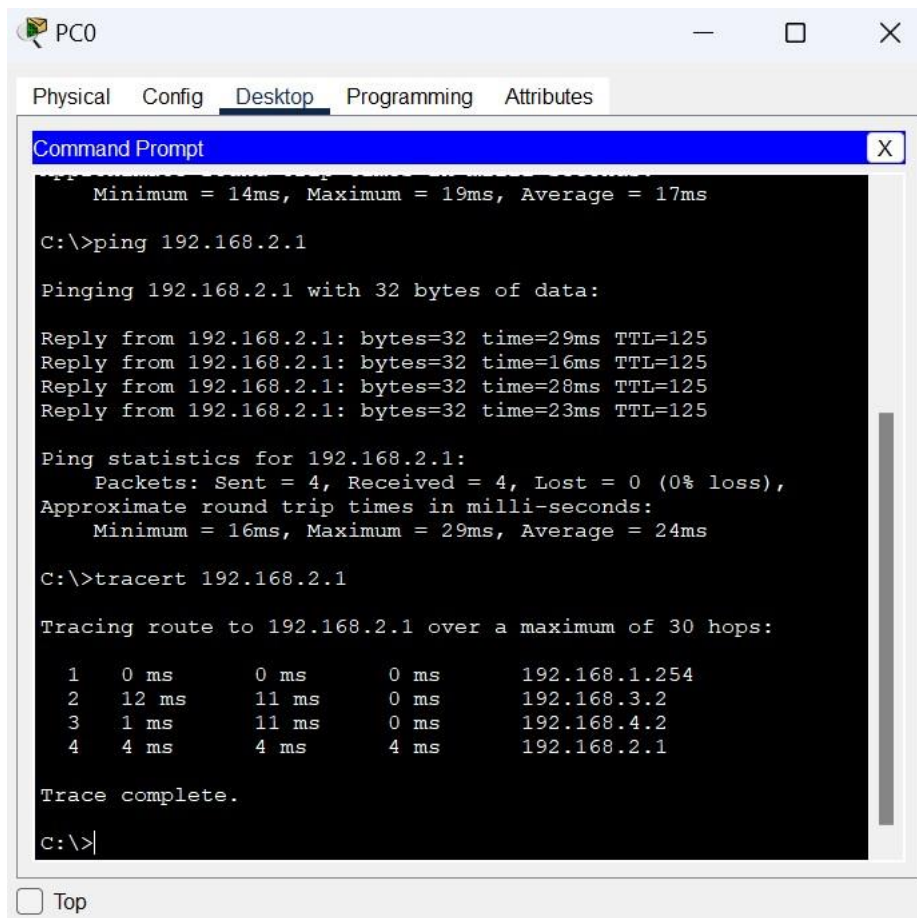
192.168.3.0/24 via 192.168.4.1

Remove

Equivalent IOS Commands

```
Router(config)#
Router(config)#ip route 192.168.1.0 255.255.255.0 192.168.4.1
Router(config)#ip route 192.168.3.0 255.255.255.0 192.168.4.1
Router(config)#
Router(config)#
Router(config)#
Router(config)#
```

Using 'tracert' command to see information of each hop of the packet, while traveling from the Source Network to the Destination Network.



The screenshot shows a Windows-style window titled 'PC0' with tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The command prompt shows the execution of 'ping 192.168.2.1' and 'tracert 192.168.2.1'. The ping results show four successful replies with varying times (29ms, 16ms, 28ms, 23ms) and a TTL of 125. The tracert results show a path of four hops, with the final hop being the destination 192.168.2.1. The window also has a 'Top' button at the bottom left.

```
Minimum = 14ms, Maximum = 19ms, Average = 17ms
C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=29ms TTL=125
Reply from 192.168.2.1: bytes=32 time=16ms TTL=125
Reply from 192.168.2.1: bytes=32 time=28ms TTL=125
Reply from 192.168.2.1: bytes=32 time=23ms TTL=125

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 16ms, Maximum = 29ms, Average = 24ms

C:\>tracert 192.168.2.1

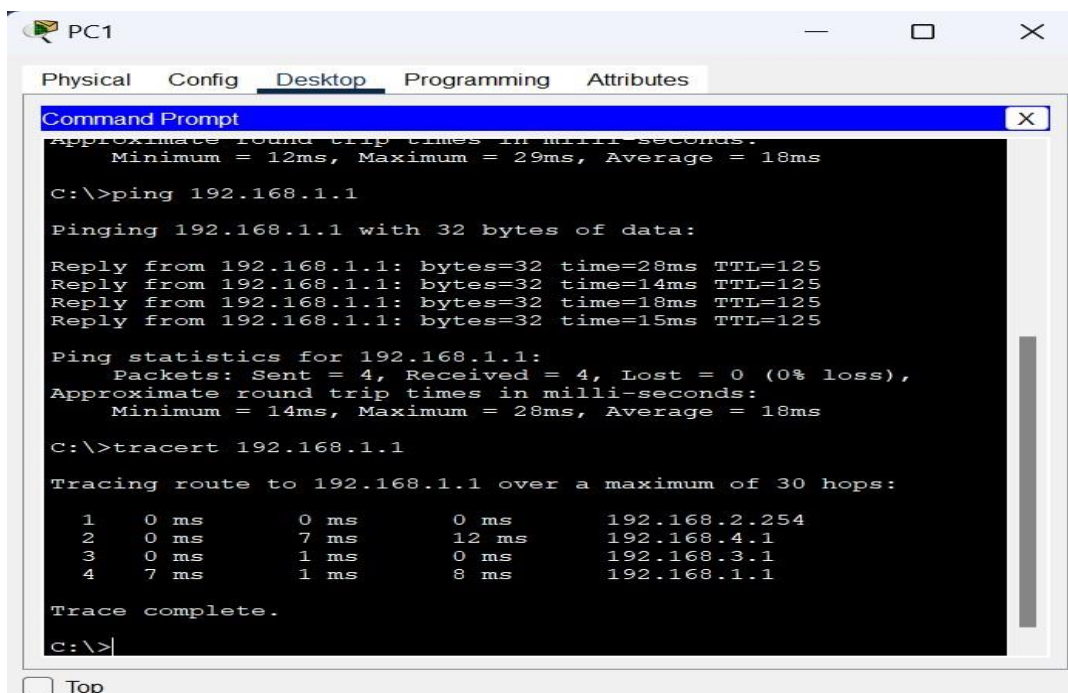
Tracing route to 192.168.2.1 over a maximum of 30 hops:

  1  0 ms      0 ms      0 ms      192.168.1.254
  2  12 ms     11 ms     0 ms      192.168.3.2
  3  1 ms      11 ms     0 ms      192.168.4.2
  4  4 ms      4 ms      4 ms      192.168.2.1

Trace complete.

C:\>
```

Using 'tracert' command to see information of each hop of the packet, while traveling from the Source Network to the Destination Network.



The screenshot shows a Windows-style window titled '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 execution of 'ping 192.168.1.1' and 'tracert 192.168.1.1'. The ping results show four successful replies with varying times (28ms, 14ms, 18ms, 15ms) and a TTL of 125. The tracert results show a path of four hops, with the final hop being the destination 192.168.1.1. The window also has a 'Top' button at the bottom left.

```
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 29ms, Average = 18ms

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=28ms TTL=125
Reply from 192.168.1.1: bytes=32 time=14ms TTL=125
Reply from 192.168.1.1: bytes=32 time=18ms TTL=125
Reply from 192.168.1.1: bytes=32 time=15ms TTL=125

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 28ms, Average = 18ms

C:\>tracert 192.168.1.1

Tracing route to 192.168.1.1 over a maximum of 30 hops:

  1  0 ms      0 ms      0 ms      192.168.2.254
  2  0 ms      7 ms      12 ms     192.168.4.1
  3  0 ms      1 ms      0 ms      192.168.3.1
  4  7 ms      1 ms      8 ms      192.168.1.1

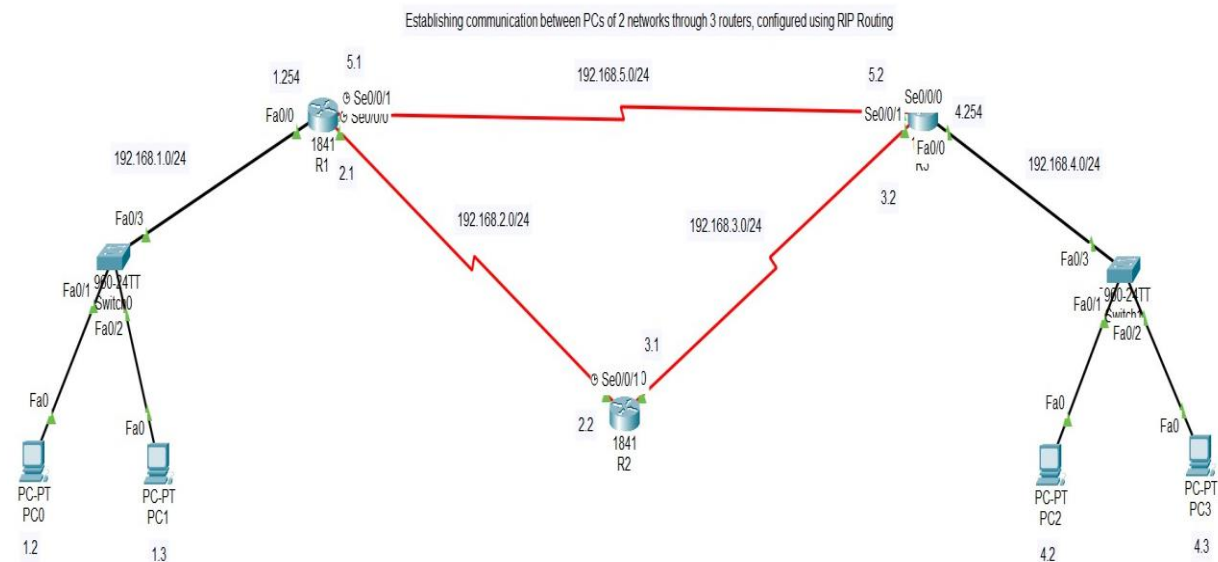
Trace complete.

C:\>
```



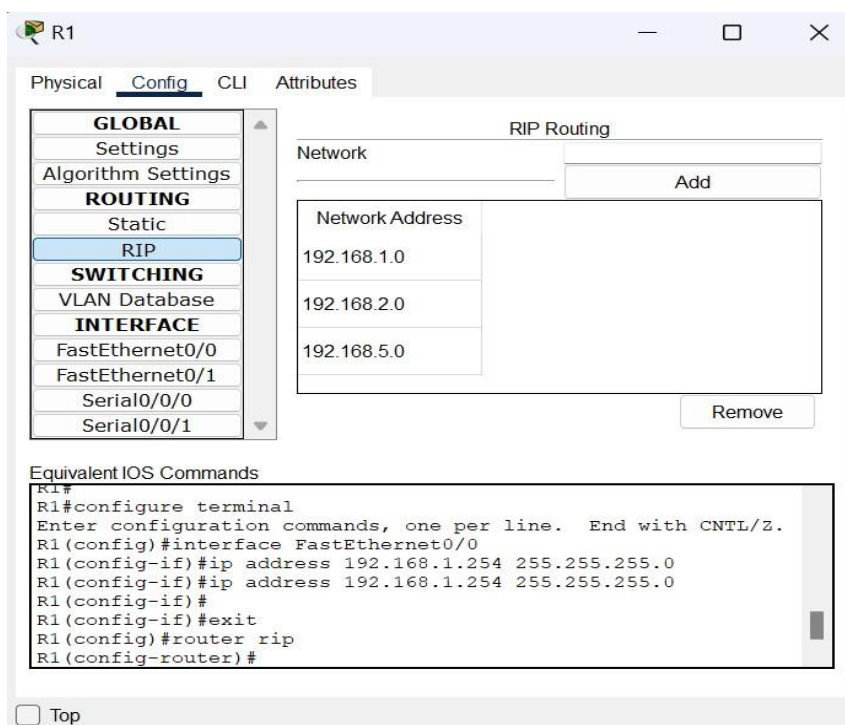
## Experiment 13

Create a network using Three (3) routers and establish the communication between two different networks (PCs); use Dynamic Routing (RIP) Protocol to establish the routing and study the routing table.



Routing Table of each Router, configured using IP Protocol

Router R1



## Router R2

The screenshot shows the configuration window for Router R2. The 'Config' tab is active, and the 'RIP' option is selected under the 'ROUTING' section. The 'RIP Routing' section displays a list of network addresses: 192.168.2.0 and 192.168.3.0. Below the list is a 'Remove' button. The 'Equivalent IOS Commands' section shows the following commands:

```
R2>enable
R2#
R2#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#router rip
R2(config-router)#
```

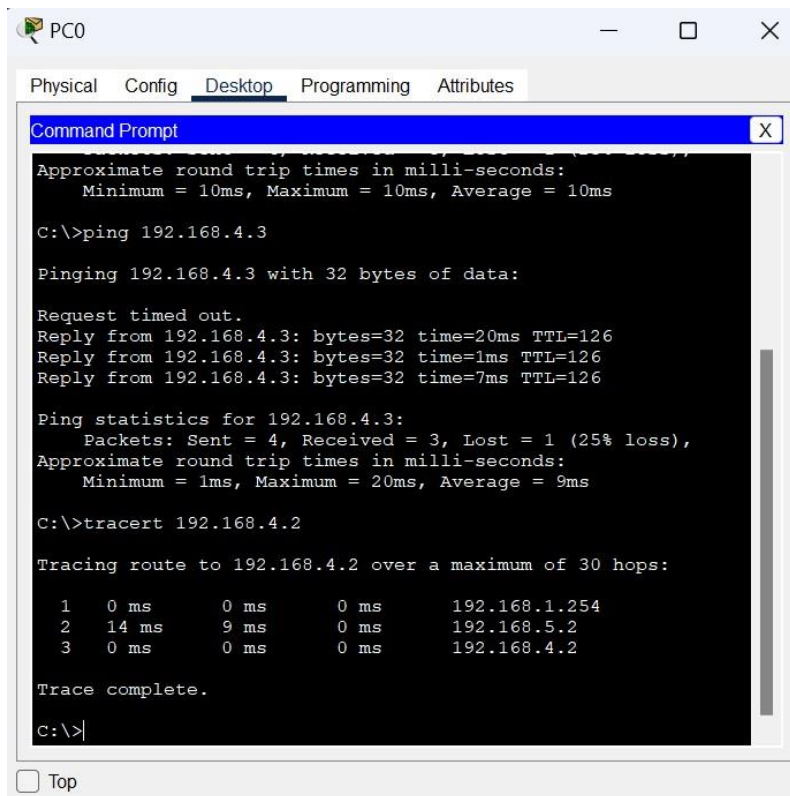
At the bottom left, there is a 'Top' button.

## Router R3

The screenshot shows the configuration window for Router R3. The 'Config' tab is active, and the 'RIP' option is selected under the 'ROUTING' section. The 'RIP Routing' section displays a list of network addresses: 192.168.3.0, 192.168.4.0, and 192.168.5.0. Below the list is a 'Remove' button. The 'Equivalent IOS Commands' section shows the following commands:

```
R3#
R3#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#interface FastEthernet0/0
R3(config-if)#ip address 192.168.4.254 255.255.255.0
R3(config-if)#ip address 192.168.4.254 255.255.255.0
R3(config-if)#
R3(config-if)#exit
R3(config)#router rip
R3(config-router)#
```

Using 'tracert' command to see information of each hop of the packet, while traveling from the Source Network to the Destination Network:



The screenshot shows a Windows Command Prompt window titled 'PC0'. The window has tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active. The Command Prompt displays the following text:

```
Approximate round trip times in milli-seconds:
  Minimum = 10ms, Maximum = 10ms, Average = 10ms

C:\>ping 192.168.4.3

Pinging 192.168.4.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.4.3: bytes=32 time=20ms TTL=126
Reply from 192.168.4.3: bytes=32 time=1ms TTL=126
Reply from 192.168.4.3: bytes=32 time=7ms TTL=126

Ping statistics for 192.168.4.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 20ms, Average = 9ms

C:\>tracert 192.168.4.2

Tracing route to 192.168.4.2 over a maximum of 30 hops:

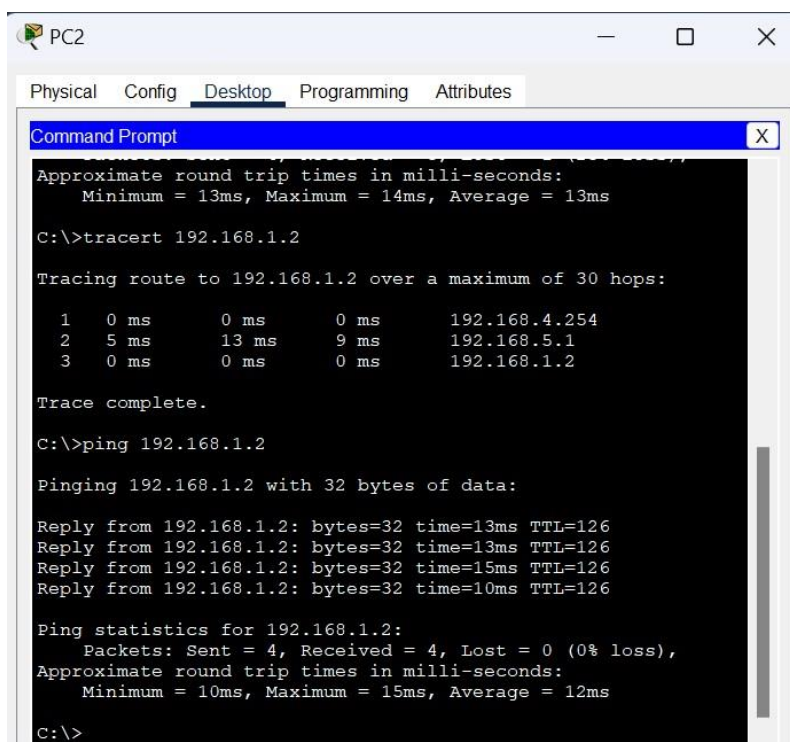
  1  0 ms    0 ms    0 ms    192.168.1.254
  2  14 ms   9 ms    0 ms    192.168.5.2
  3  0 ms    0 ms    0 ms    192.168.4.2

Trace complete.

C:\>
```

At the bottom of the window, there is a 'Top' button.

Using 'tracert' command to see information of each hop of the packet, while traveling from the Source Network to the Destination Network:



The screenshot shows a Windows Command Prompt window titled 'PC2'. The window has tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active. The Command Prompt displays the following text:

```
Approximate round trip times in milli-seconds:
  Minimum = 13ms, Maximum = 14ms, Average = 13ms

C:\>tracert 192.168.1.2

Tracing route to 192.168.1.2 over a maximum of 30 hops:

  1  0 ms    0 ms    0 ms    192.168.4.254
  2  5 ms   13 ms   9 ms    192.168.5.1
  3  0 ms    0 ms    0 ms    192.168.1.2

Trace complete.

C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

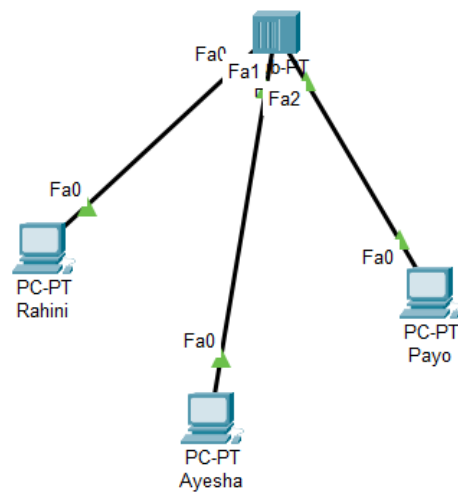
Reply from 192.168.1.2: bytes=32 time=13ms TTL=126
Reply from 192.168.1.2: bytes=32 time=13ms TTL=126
Reply from 192.168.1.2: bytes=32 time=15ms TTL=126
Reply from 192.168.1.2: bytes=32 time=10ms TTL=126

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 15ms, Average = 12ms

C:\>
```

## Experiment 14

### Hub Connectivity



### PC0 Configuration

Rahini

Physical Config **Desktop** Programming Attributes

**IP Configuration**

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.50.20

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

### PC1 Configuration

Ayesha

Physical Config **Desktop** Programming Attributes

**IP Configuration**

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.50.21

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

## PC2 Configuration

Payo

Physical Config **Desktop** Programming Attributes

**IP Configuration**

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

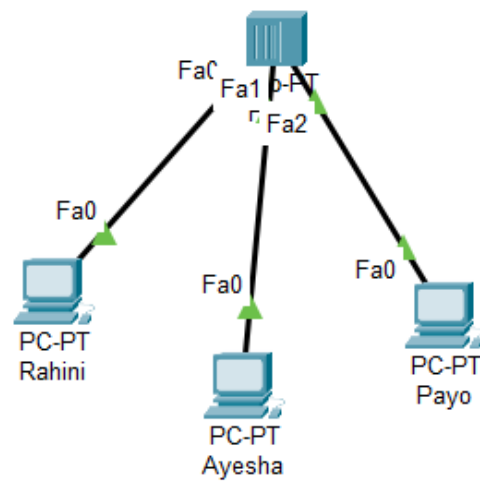
IPv4 Address: 192.168.50.22

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

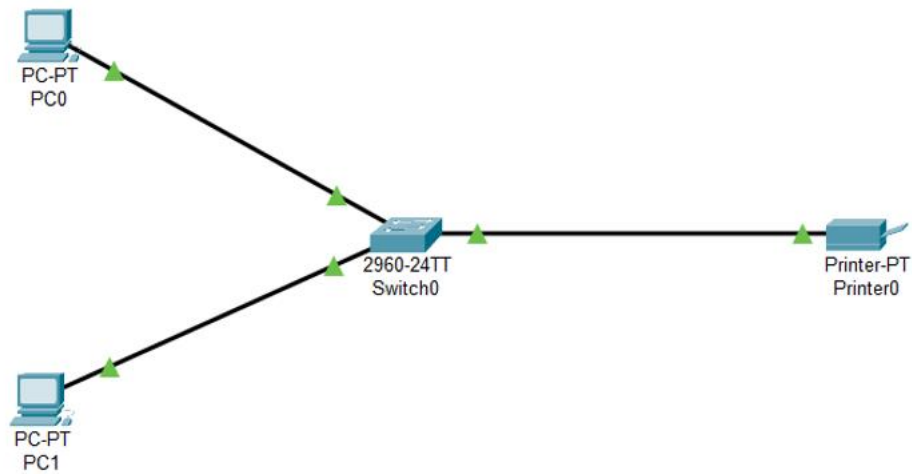
## Simulation



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	--	Ayesha	Payo	ICMP		0.000	N	0	(edit)	
	Successful	Rahini	Payo	ICMP		0.000	N	1	(edit)	

## Experiment 15

### PC to Printer Connectivity



### PC0 Configuration

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.1

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

### PC1 Configuration

PC1

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.1.2

Subnet Mask 255.255.255.0

Default Gateway 0.0.0.0

DNS Server 0.0.0.0

Printer Configuration

Printer0

Physical

Config

Attributes

GLOBAL

Settings

INTERFACE

FastEthernet0

FastEthernet0

Port Status

On

Bandwidth

100 Mbps

10 Mbps

Duplex

Half Duplex

Full Duplex

MAC Address0090.0C95.CE98

IP Configuration

DHCP

Static

IPv4 Address192.168.1.3

Subnet Mask255.255.255.0

IPv6 Configuration





Automatic

Static

IPv6 Address

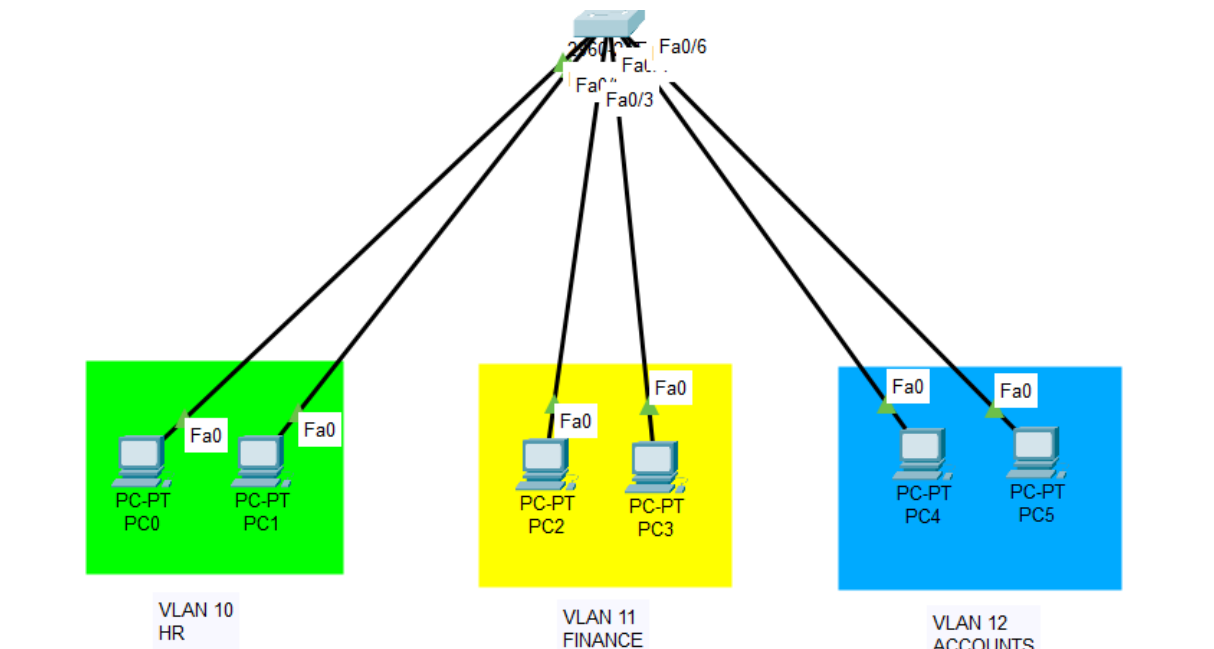
Link Local Address: FE80::290:CFF:FE95:CE98

Simulation

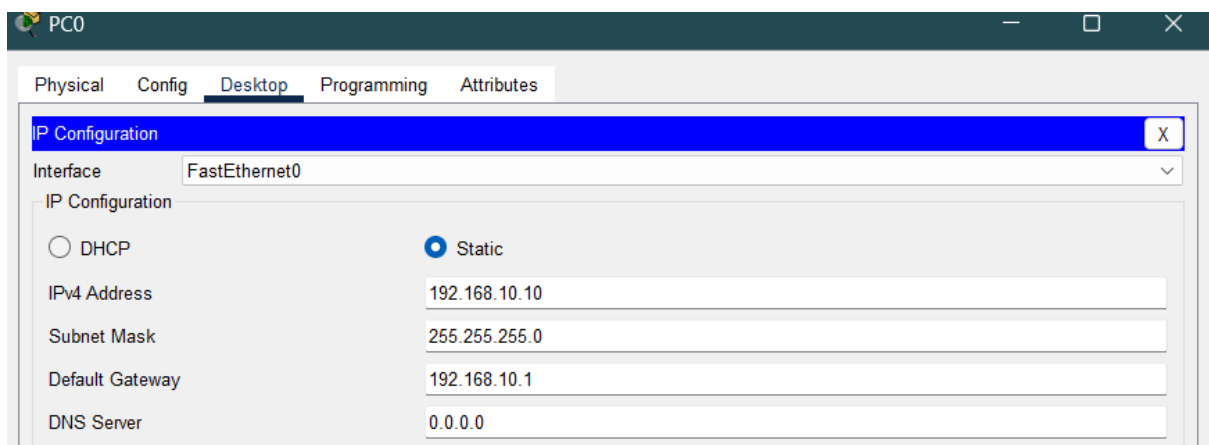
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	Printer0	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC1	Printer0	ICMP		0.000	N	1	(edit)	(delete)

## Experiment 16

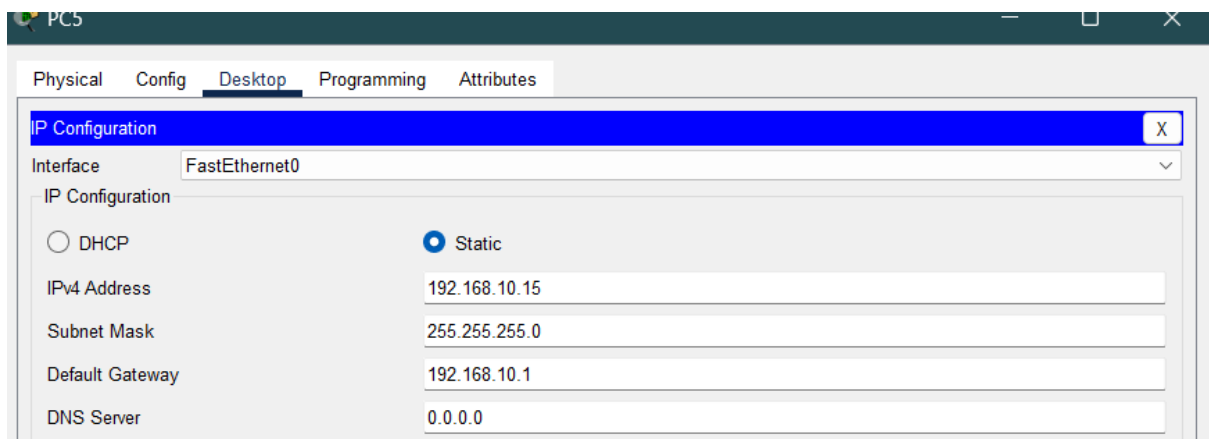
### Virtual LAN



### PC0 Configuration



### PC5 Configuration





## Changing membership of Interfaces

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name hr
Switch(config-vlan)#exit
Switch(config)#vlan 11
Switch(config-vlan)#name finance
Switch(config-vlan)#exit
Switch(config)#vlan 12
Switch(config-vlan)#accounts
      ^

% Invalid input detected at '^' marker.

Switch(config-vlan)#name accounts
Switch(config-vlan)#exit
Switch(config)#interface fastethernet 0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#
Switch(config)#interface fastethernet 0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#
Switch(config)#interface fastethernet 0/3
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 11
Switch(config-if)#exit
Switch(config)#
Switch(config)#interface fastethernet 0/4
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 11
Switch(config-if)#exit
Switch(config)#
Switch(config)#interface fastethernet 0/5
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 12
Switch(config-if)#exit
Switch(config)#
Switch(config)#interface fastethernet 0/6
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 12
Switch(config-if)#exit
```

## Verification

```
Switch#
Switch#show vlan
```

VLAN	Name	Status	Ports
1	default	active	Fa0/7, Fa0/8, Fa0/9, Fa0/10 Fa0/11, Fa0/12, Fa0/13, Fa0/14 Fa0/15, Fa0/16, Fa0/17, Fa0/18 Fa0/19, Fa0/20, Fa0/21, Fa0/22 Fa0/23, Fa0/24, Gig0/1, Gig0/2
10	hr	active	Fa0/1, Fa0/2
11	finance	active	Fa0/3, Fa0/4
12	accounts	active	Fa0/5, Fa0/6
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
1	enet	100001	1500	-	-	-	-	-	0	0
10	enet	100010	1500	-	-	-	-	-	0	0
11	enet	100011	1500	-	-	-	-	-	0	0
12	enet	100012	1500	-	-	-	-	-	0	0
1002	fddi	101002	1500	-	-	-	-	-	0	0
1003	tr	101003	1500	-	-	-	-	-	0	0
1004	fdnet	101004	1500	-	-	-	ieee	-	0	0
1005	trnet	101005	1500	-	-	-	ibm	-	0	0

VLAN	Type	SAID	MTU	Parent	RingNo	BridgeNo	Stp	BrdgMode	Trans1	Trans2
------	------	------	-----	--------	--------	----------	-----	----------	--------	--------

```
Remote SPAN VLANs
```

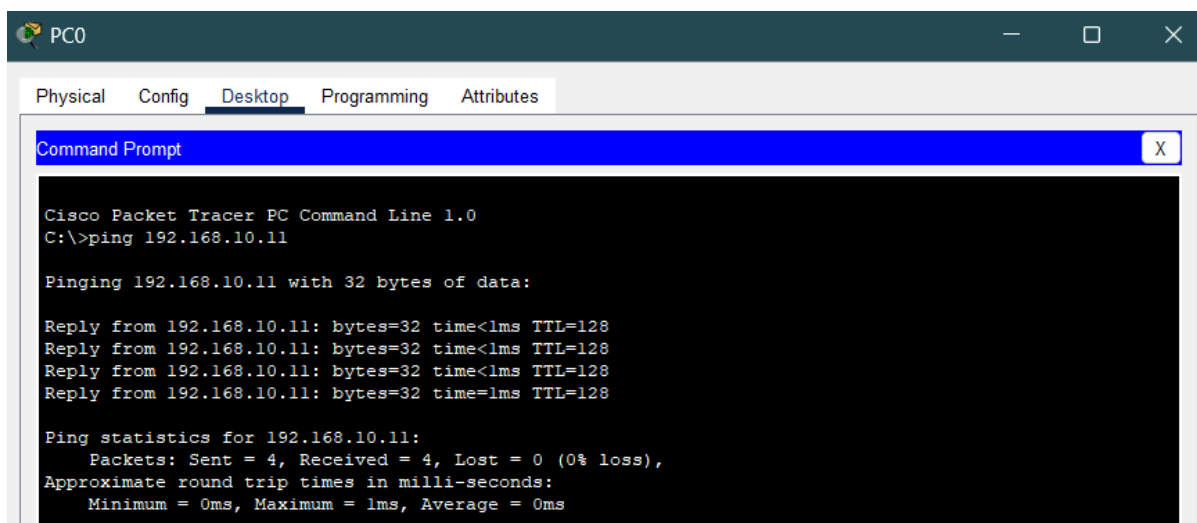
```
Primary Secondary Type Ports
```

Switch#show interface status

Port	Name	Status	Vlan	Duplex	Speed	Type
Fa0/1		connected	10	auto	auto	10/100BaseTX
Fa0/2		connected	10	auto	auto	10/100BaseTX
Fa0/3		connected	11	auto	auto	10/100BaseTX
Fa0/4		connected	11	auto	auto	10/100BaseTX
Fa0/5		connected	12	auto	auto	10/100BaseTX
Fa0/6		connected	12	auto	auto	10/100BaseTX
Fa0/7		notconnect	1	auto	auto	10/100BaseTX
Fa0/8		notconnect	1	auto	auto	10/100BaseTX
Fa0/9		notconnect	1	auto	auto	10/100BaseTX
Fa0/10		notconnect	1	auto	auto	10/100BaseTX
Fa0/11		notconnect	1	auto	auto	10/100BaseTX
Fa0/12		notconnect	1	auto	auto	10/100BaseTX
Fa0/13		notconnect	1	auto	auto	10/100BaseTX
Fa0/14		notconnect	1	auto	auto	10/100BaseTX
Fa0/15		notconnect	1	auto	auto	10/100BaseTX
Fa0/16		notconnect	1	auto	auto	10/100BaseTX
Fa0/17		notconnect	1	auto	auto	10/100BaseTX
Fa0/18		notconnect	1	auto	auto	10/100BaseTX
Fa0/19		notconnect	1	auto	auto	10/100BaseTX
Fa0/20		notconnect	1	auto	auto	10/100BaseTX
Fa0/21		notconnect	1	auto	auto	10/100BaseTX

--More--

Pinging PC0 to PC1 (Same VLAN)



Pinging PC1 to PC2 (Different VLAN)

