Experiment No: 01

Experiment Name : To Configure Local Area Network.

Apparatus:
1.Cisco Packet Tracer
2. Computer
3. Switch
4.Copper Straight through cable

Procedure:

Step-1: At first open the cisco packet tracer .

Step-2: Take 4 Computer PC0, PC1, PC2 and PC3 . Take a switch ,the model of switch is 2950-24.

Step-3: Take a copper straight through cable to connect this device.

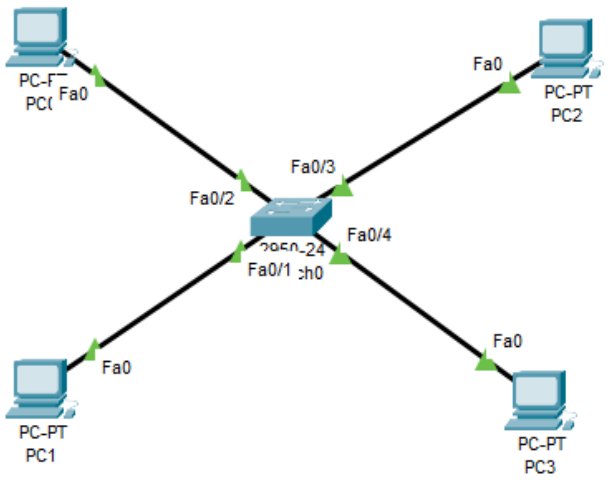


Figure-01 : Setup Layout

Step-4: IP address configuration for PC0, PC1,PC2 and PC3. At first click PC0 ,desktop then IP configuration . Then set the IP address of computers.

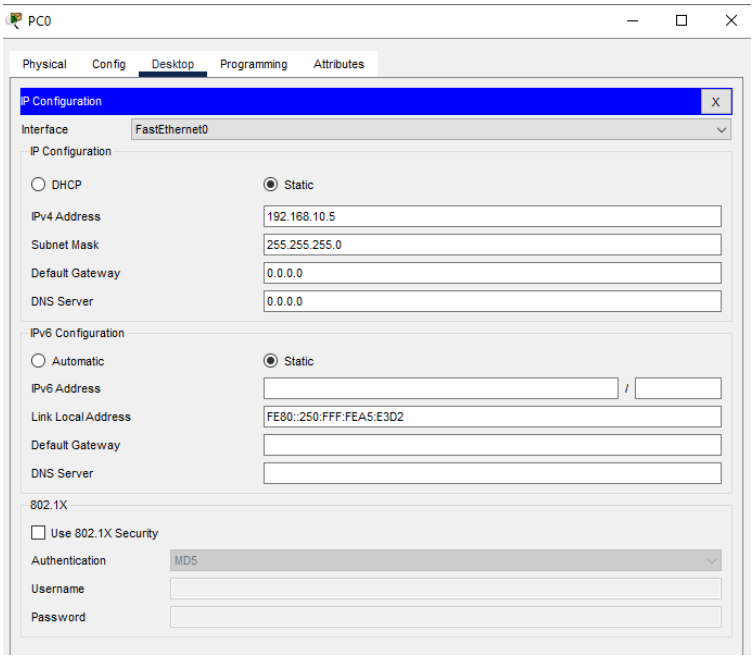
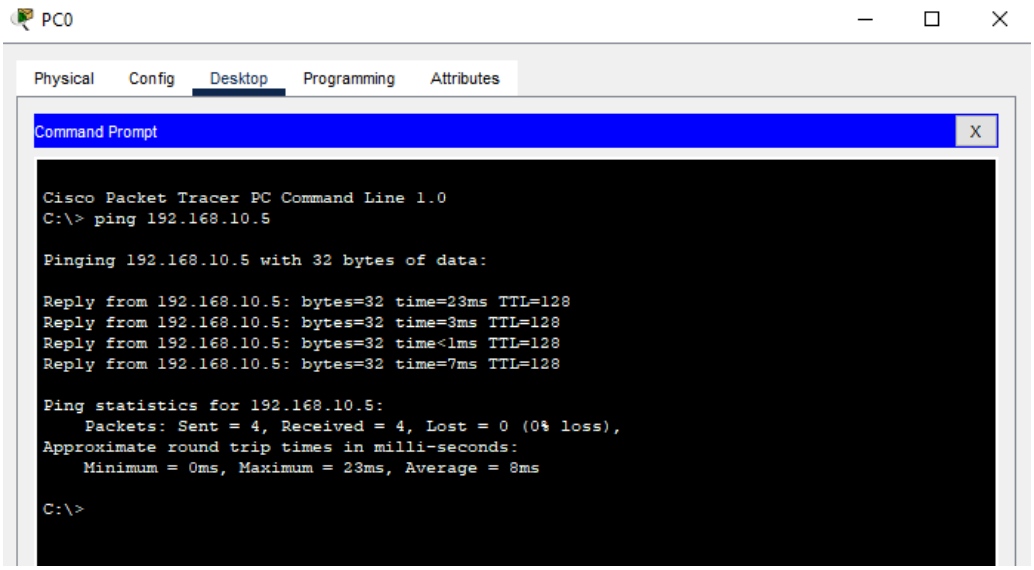


Figure-02: PC0 IP address and gateway setup

Step-5: Open Command Prompt of PC0 and Sent Ping to PC3

Result:



Experiment No: 02

Experiment Name : Transfer packets through different network(Switch routing)

Apparatus:
1.Cisco Packet Tracer
2. Computer
3. Switch
4.Router
5.Copper Straight through cable

Procedure:

Step-1: At first open the cisco packet tracer .

Step-2: Take 4 computer PC0 ,PC1,PC2 and PC3. Take 2 switch and a router. The model of two switchs are 2950-24. The model of router is 2811.

Step-3: Take a copper straight through cable to connect this device.

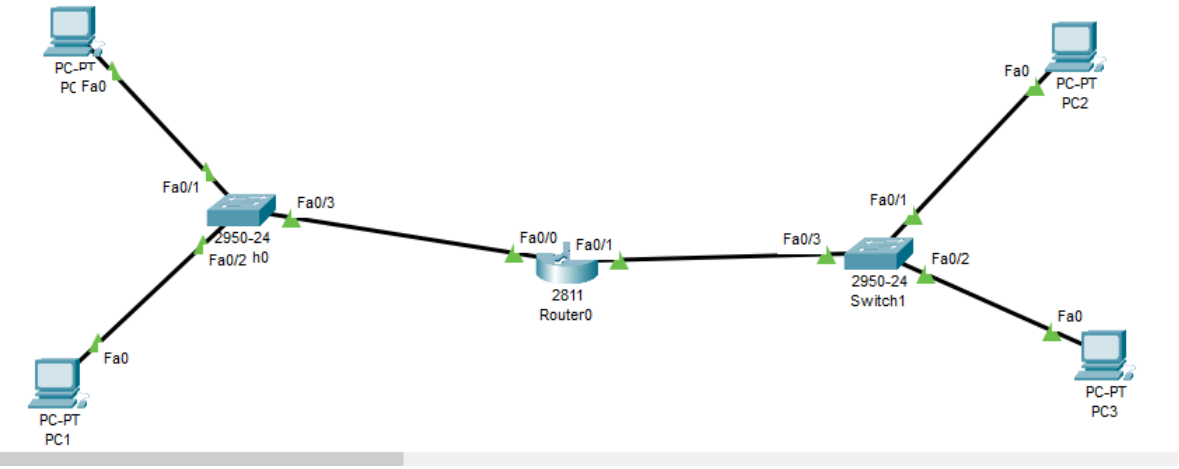


Figure-01 : Setup Layout

Step-4: IP address configuration for PC0, PC1,PC2 and PC3. At first click PC0 ,desktop then IP configuration . Then set the IP address of computers.

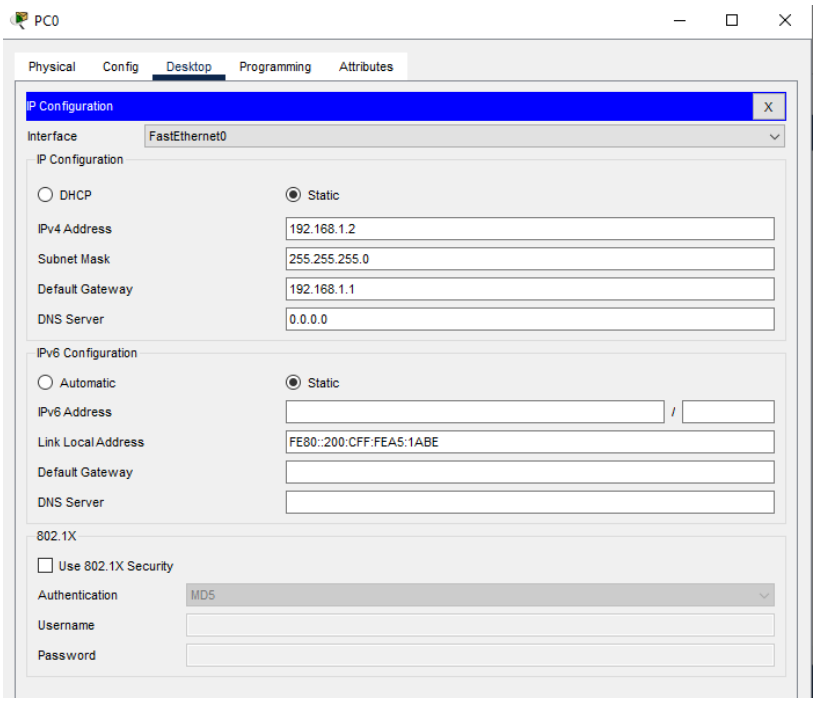


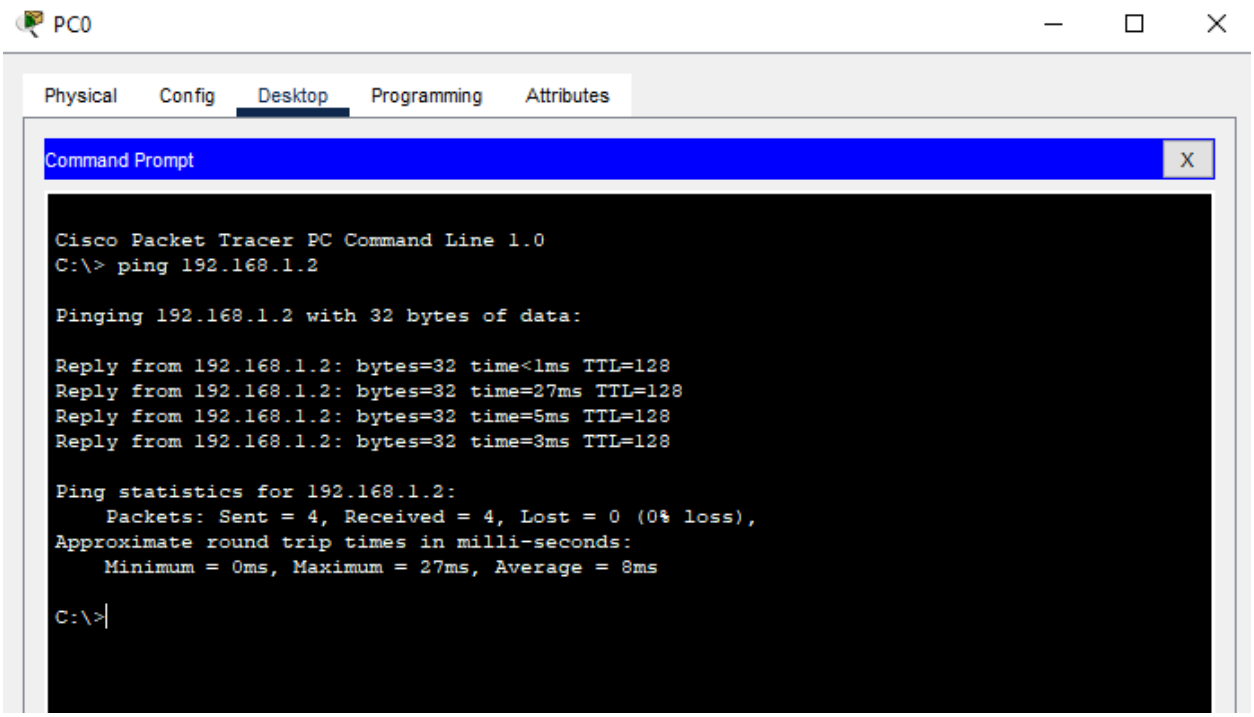
Figure-02: PC0 IP address and gateway setup

Step-5: Router Configuration

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/1
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

Step-6: Open Command Prompt of PC0 and Sent Ping to PC2

Result:


PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
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=27ms TTL=128
Reply from 192.168.1.2: bytes=32 time=5ms TTL=128
Reply from 192.168.1.2: bytes=32 time=3ms 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 = 27ms, Average = 8ms
C:\>

Experiment No: 03

Experiment Name : To configure dynamic IP routing through DHCP (Dynamic Host Configuration Protocol (DHCP).

Apparatus:
1.Cisco Packet Tracer
2. Computer
3. Switch
4.Router
5.Copper Straight through cable

Procedure:

Step-1: At first open the cisco packet tracer .

Step-2: Take 4 computer PC0 ,PC1,PC2 . Take a switch and a router. The model of two switch is 2960-24. The model of router is 2811.

Step-3: Take a copper straight through cable to connect this device.

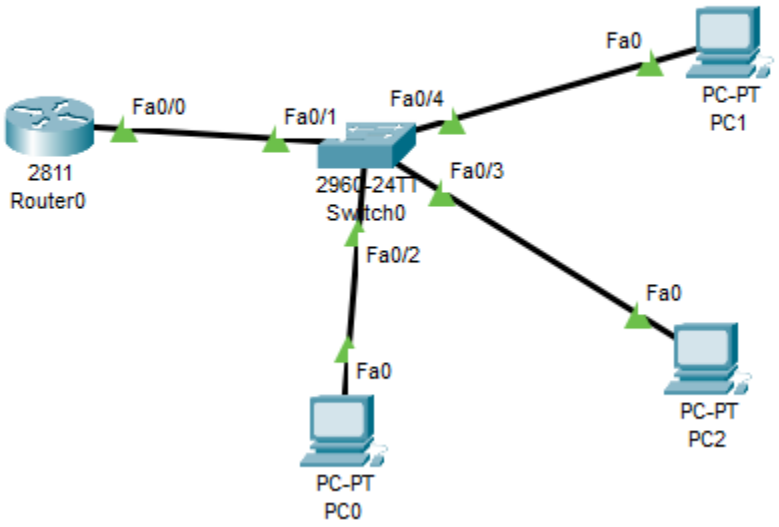


Figure-01 : Setup Layout

Step-4: IP address configuration for PC0, PC1 and PC2. At first click PC0 ,desktop then IP configuration . Then set the IP address of computers.

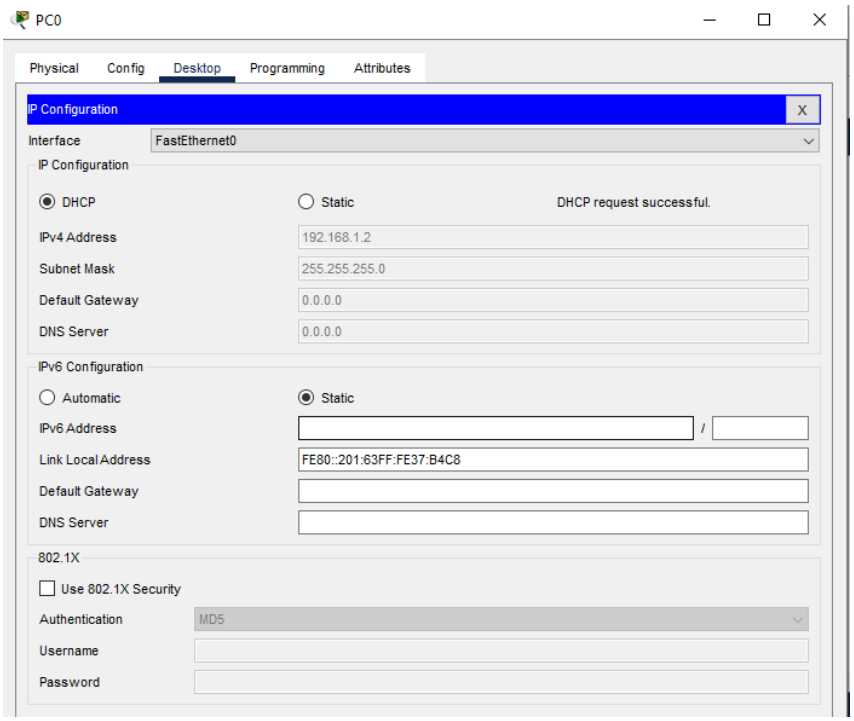


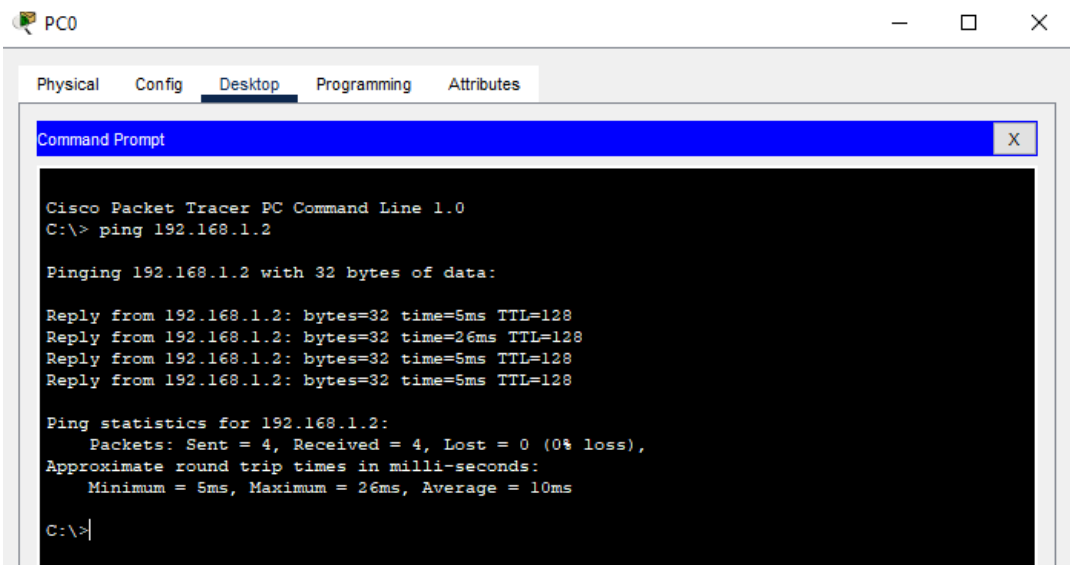
Figure-02: PC0 IP address and gateway setup

Step-5: Router Configuration

```
Router>enable
Router#configure terminal
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#ip dhcp pool ice
Router(dhcp-config)#network 192.168.1.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.1.1
Router(dhcp-config)#exit
Router(config)#exit
Router#
Router#wr
Building configuration...
[OK]
Router#
```

Step-6: Open Command Prompt of PC0 and Sent Ping to PC1

Result:


PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
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=5ms TTL=128
Reply from 192.168.1.2: bytes=32 time=26ms TTL=128
Reply from 192.168.1.2: bytes=32 time=5ms TTL=128
Reply from 192.168.1.2: bytes=32 time=5ms 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 = 5ms, Maximum = 26ms, Average = 10ms
C:\>

Experiment No: 04

Experiment Name : To configure EIGRP(Enhanced interior Gateway routing protocol)Enhanced Interior Gateway Routing P

Apparatus:
1.Cisco Packet Tracer
2. Computer
3. Switch
4.Router
5.Copper Straight through cable
6.Copper Cross-over cable

Procedure:

Step-1: At first open the cisco packet tracer .

Step-2: Take 6 computer PC0 ,PC1,PC2,PC3,PC4 and PC5 . Take 3 switch and 3 router. The model of switch is 2960-24. The model of router is 2811.

Step-3: Take a copper straight through cable to connect switch to computer. Take a copper cross-over cable to connect router to router.

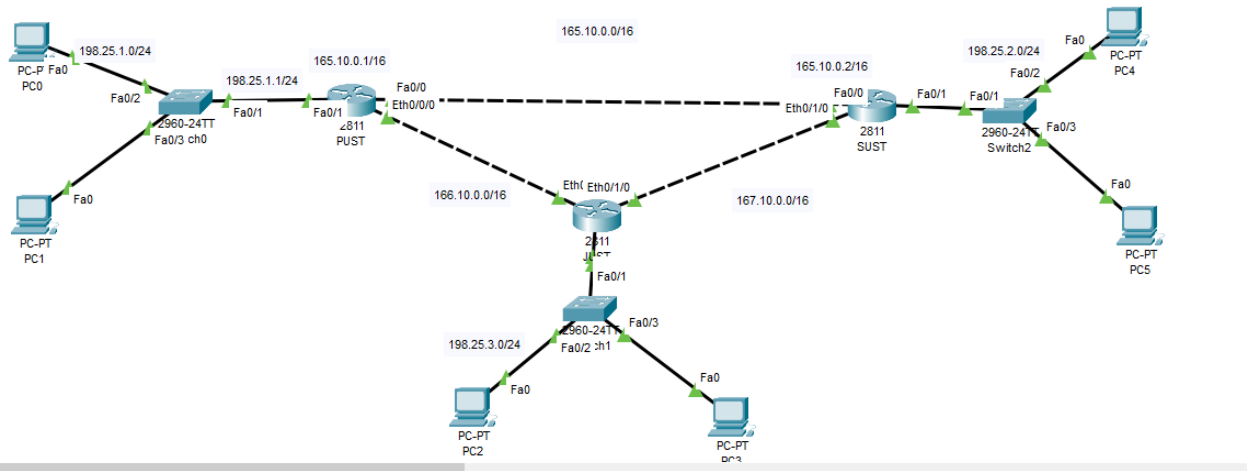


Figure-01 : Setup Layout

Step-4: IP address configuration for PC0, PC1 , PC2,PC3,PC4 and PC5. At first click PC0 desktop then IP configuration . Then set the IP address of computers.

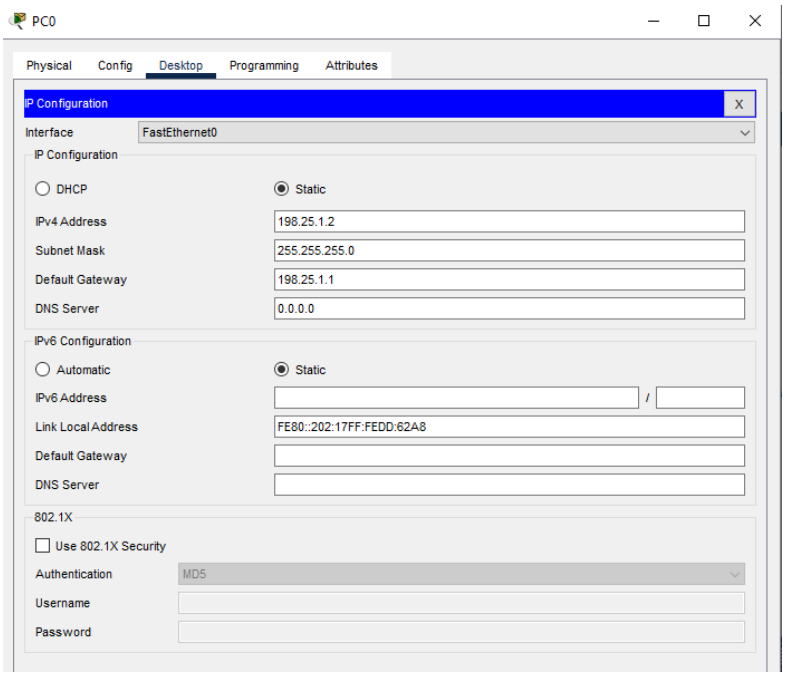


Figure-02: PC0 IP address and gateway setup

Step-5: Here only two port.So we add extra two port.At first we click a router then click WIC-1ENET. Add two port.

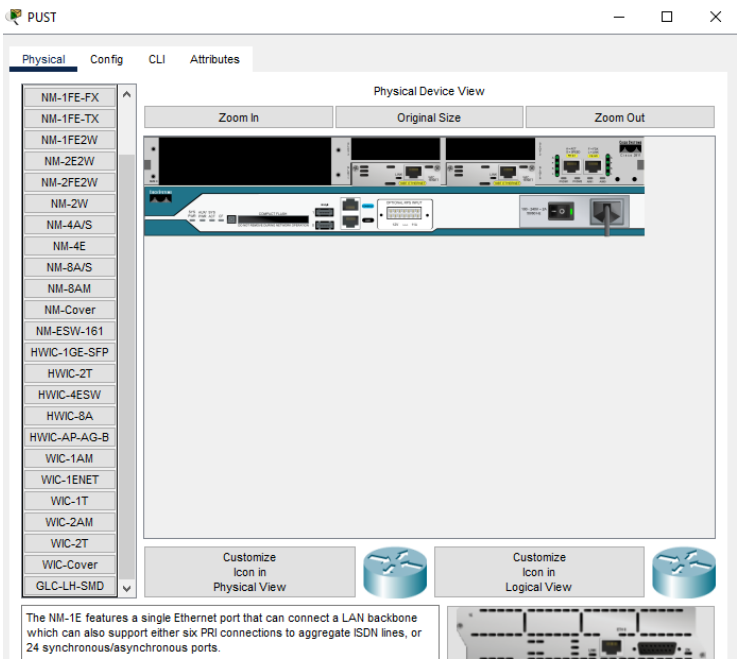


Fig-3:By adding port

Step-6: Router Configuration

Interface configuration of router :

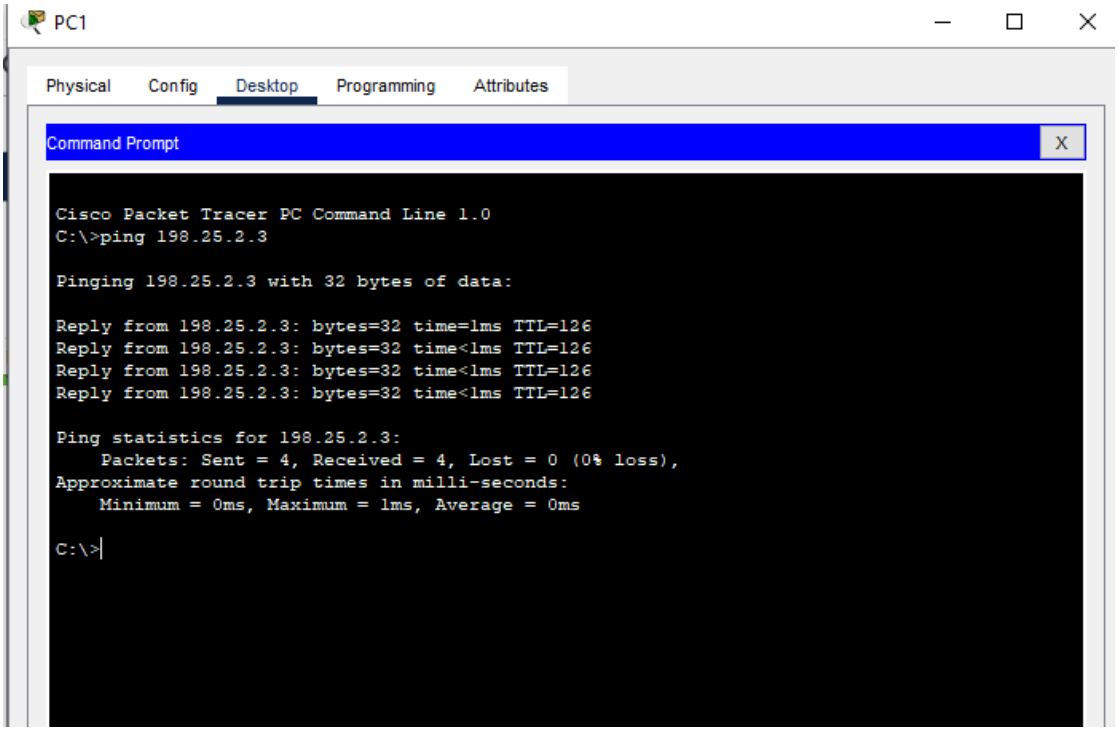
```
Router>en
Router#configure terminal
Router(config)#interface ethernet 0/0/0
Router(config-if)#ip address 166.10.0.1 255.255.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface fastethernet 0/0
Router(config-if)#ip address 165.10.0.1 255.255.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface fastethernet 0/1
Router(config-if)#ip address 198.25.1.1 255.255.0.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router#exit
Router#WR
```

EIGRP configure of router:

```
Router>enable
Router#configure terminal
Router#router eigrp 20
Router# network 198.25.0.0
Router# network 165.10.0.0
Router# network 166.10.0.0
Router#exit
Router#exit
Router#WR
```

Step-7: Open Command Prompt of PC1 and Sent Ping to PC5.

Result:


PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 198.25.2.3
Pinging 198.25.2.3 with 32 bytes of data:
Reply from 198.25.2.3: bytes=32 time=1ms TTL=126
Reply from 198.25.2.3: bytes=32 time<1ms TTL=126
Reply from 198.25.2.3: bytes=32 time<1ms TTL=126
Reply from 198.25.2.3: bytes=32 time<1ms TTL=126
Ping statistics for 198.25.2.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>

Experiment No: 05

Experiment Name : To configure RIP(Routing Information Protocol)Enhanced Interior Gateway Routing P

Apparatus:

1.Cisco Packet Tracer
2. Computer
3. Switch
4.Router
5.Copper Straight through cable
6.Copper Cross-over cable

Procedure:

Step-1: At first open the cisco packet tracer .

Step-2: Take 4 computer PC0 ,PC1,PC2 and PC3 . Take 2 switch and 2 router. The model of switch is 2960-24. The model of router is 2811.

Step-3: Take a copper straight through cable to connect switch to computer. Take a copper cross-over cable to connect router to router.

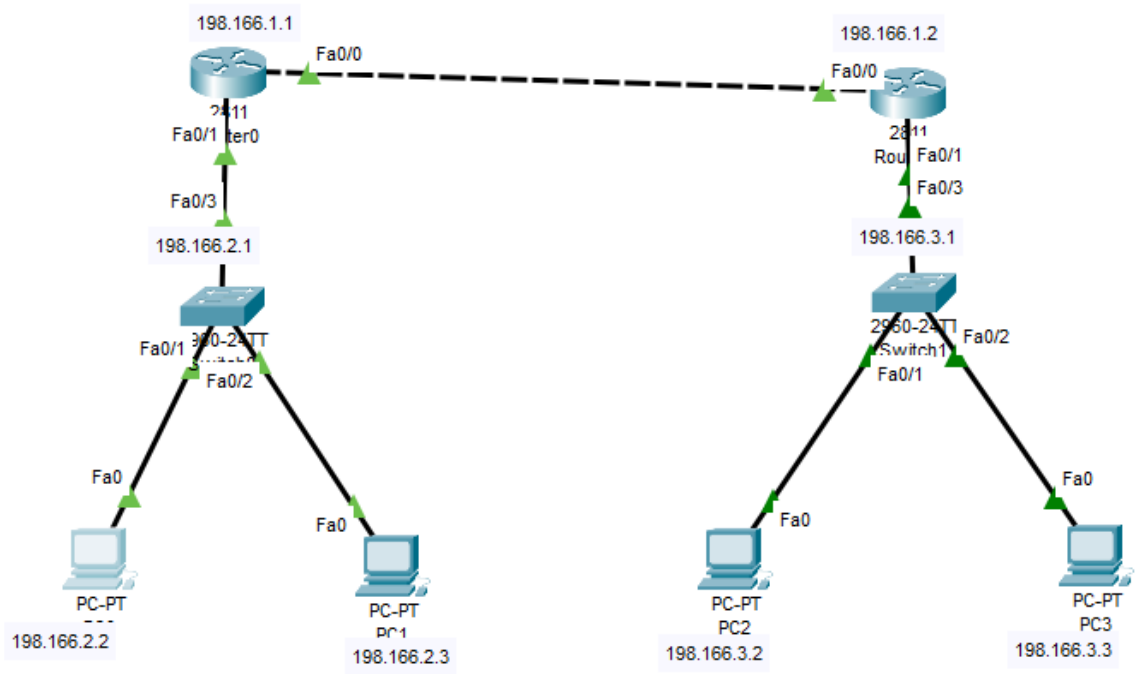


Figure-01 : Setup Layout

Step-4: IP address configuration for PC0, PC1 , PC2 and PC3. At first click PC0 desktop then IP configuration . Then set the IP address of computers.

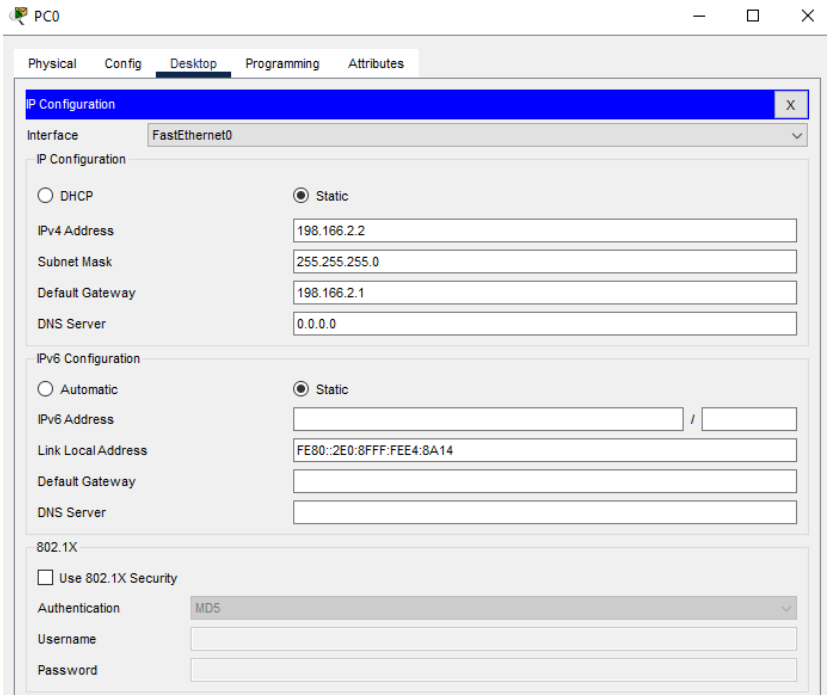


Figure-02: PC0 IP address and gateway setup

Step-5:

IP Configuration for router0:

Router>en
Router#configure terminal
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 198.166.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface fastethernet 0/1
Router(config-if)#ip address 198.166.2.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router#exit
Router#WR

Next IP configuration for router1 to follow this step.

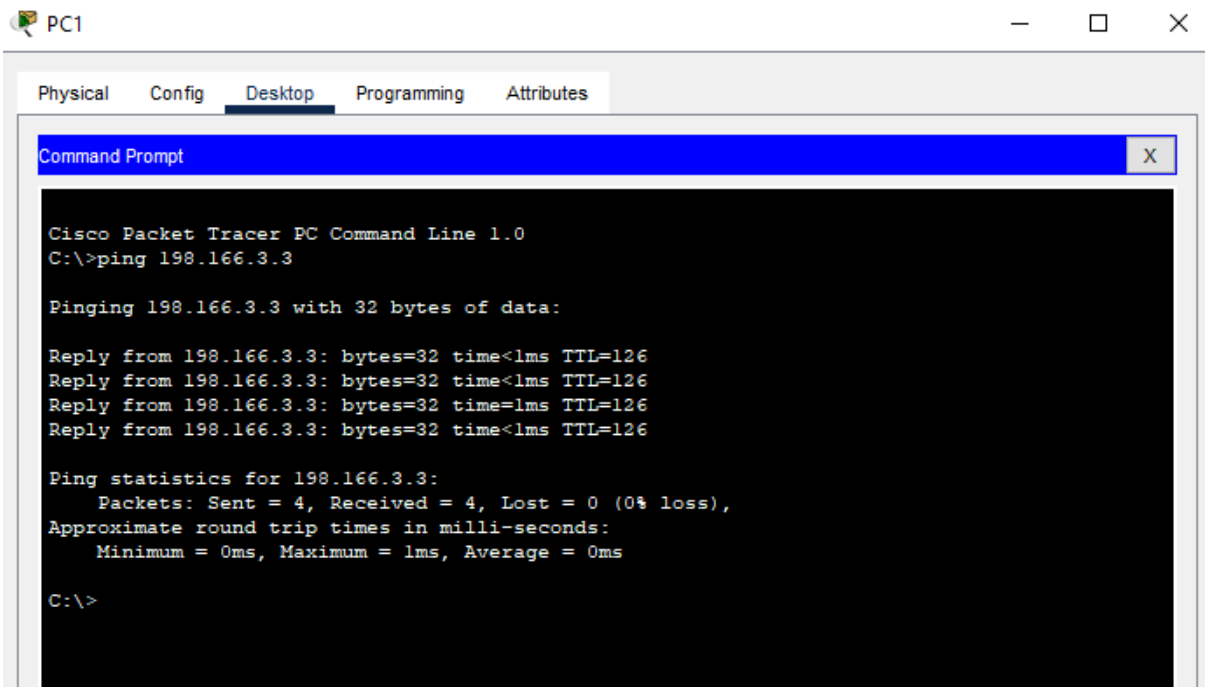
RIP configuration for router0:

Router>en
Router#configure terminal
Router(config)#router RIP
Router(config-router)#version 2
Router(config-router)#network 198.166.1.0
Router(config-router)#network 198.166.2.0
Router(config-router)#exit
Router(config)#exit
Router#wr

Next RIP configuration for router1 to follow this step.

Step-6: Open Command Prompt of PC1 and Sent Ping to PC3.

Result:



Experiment No: 06

Experiment Name : To configure Open Shortest Path First (OSPF) Routing protocol.Enhanced Interior Gateway Routing P

Apparatus:
1.Cisco Packet Tracer
2. Computer
3. Switch
4.Router
5.Copper Straight through cable
6.Copper Cross-over cable

Procedure:

Step-1: At first open the cisco packet tracer .

Step-2: Take 6 computer PC0 ,PC1,PC2,PC3,PC4,PC5 . Take 3 switch and 3 router. The model of switch is 2960-24. The model of router is 2811.

Step-3: Take a copper straight through cable to connect switch to computer. Take a copper cross-over cable to connect router to router.

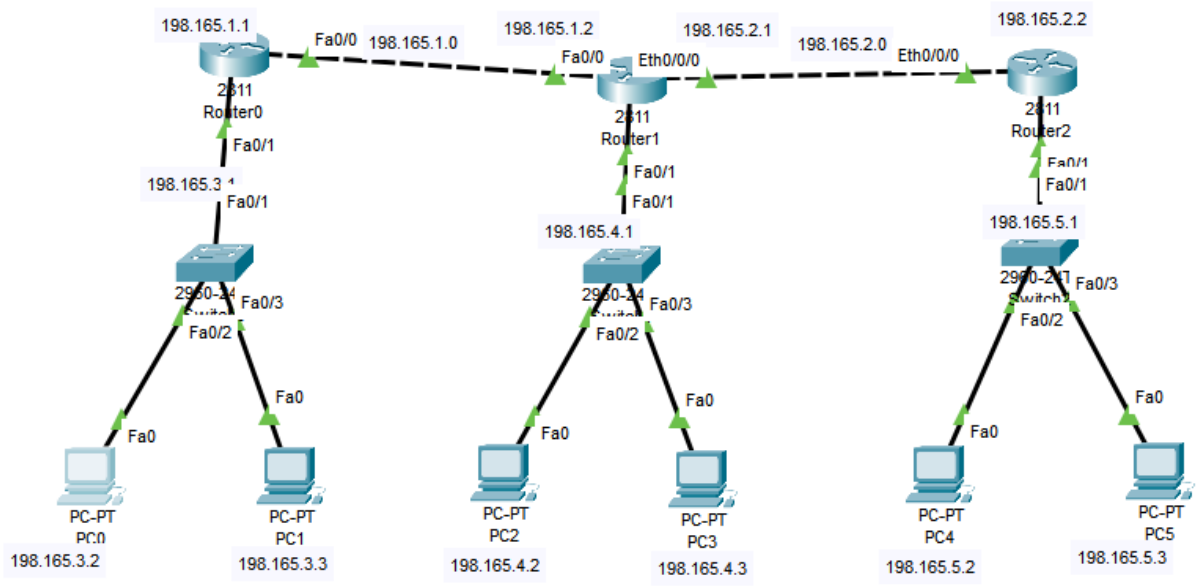


Figure-01 : Setup Layout

Step-4: IP address configuration for PC0, PC1 , PC2,PC3,PC4 and PC5. At first click PC0 ,desktop then IP configuration . Then set the IP address of computers.

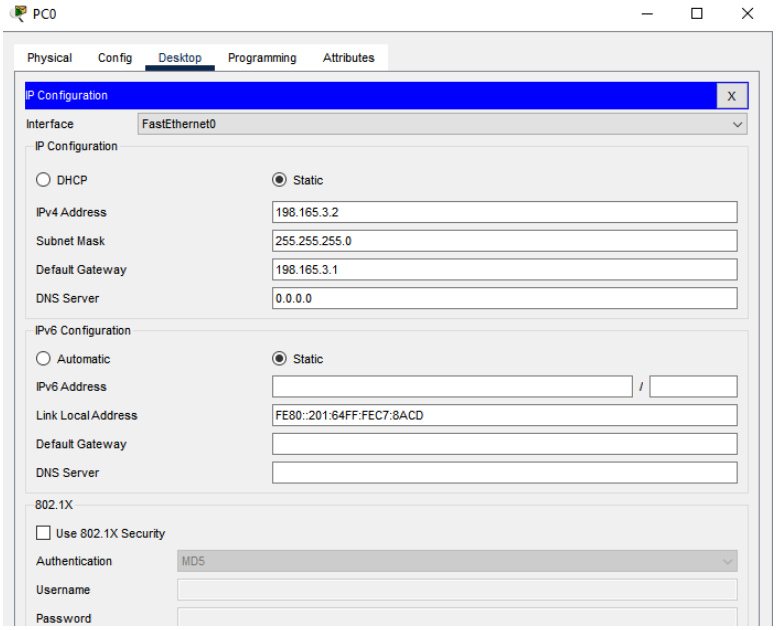


Figure-02: PC0 IP address and gateway setup

Step-5: Here only two port.So we add two port.At first we click a router then click WIC-1ENET. Add two port.

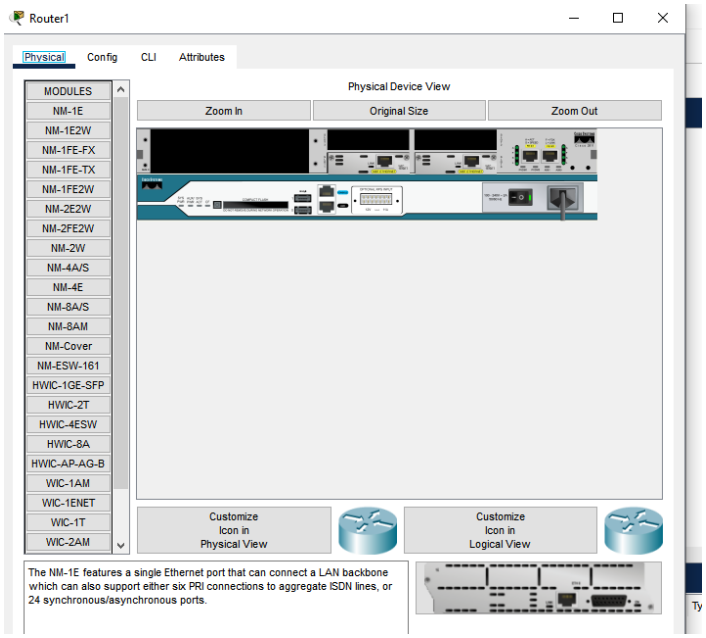


Fig-3:By adding port

Step-6:

IP Configuration for router0:

```
Router>en
Router#configure terminal
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip address 198.165.1.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router(config)#interface fastethernet 0/1
Router(config-if)#ip address 198.165.3.1  255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
Router#exit
Router#WR
```

Next IP configuration for router1 and router2 to follow this step.

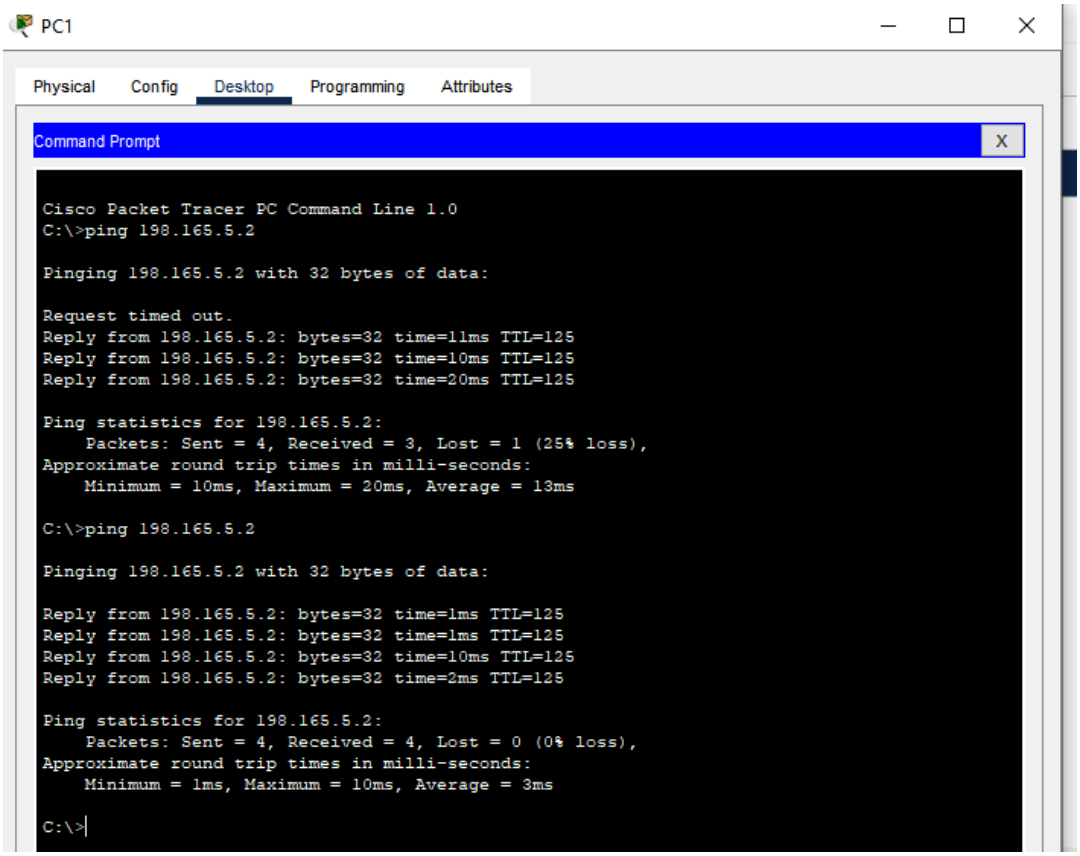
OSPF configuration for router0:

```
Router>en
Router#configure terminal
Router(config)#router ospf 1
Router(config-router)#network 198.165.1.0  0.0.0.255 area 0
Router(config-router)#network 198.165.3.0   0.0.0.255 area 0
Router(config-router)#exit
Router(config)#exit
Router#wr
```

Next RIP configuration for router1 and router2 to follow this step.

Step-7: Open Command Prompt of PC1 and Sent Ping to PC4.

Result:


PC1
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 198.165.5.2
Pinging 198.165.5.2 with 32 bytes of data:
Request timed out.
Reply from 198.165.5.2: bytes=32 time=11ms TTL=125
Reply from 198.165.5.2: bytes=32 time=10ms TTL=125
Reply from 198.165.5.2: bytes=32 time=20ms TTL=125
Ping statistics for 198.165.5.2:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 10ms, Maximum = 20ms, Average = 13ms
C:\>ping 198.165.5.2
Pinging 198.165.5.2 with 32 bytes of data:
Reply from 198.165.5.2: bytes=32 time=1ms TTL=125
Reply from 198.165.5.2: bytes=32 time=1ms TTL=125
Reply from 198.165.5.2: bytes=32 time=10ms TTL=125
Reply from 198.165.5.2: bytes=32 time=2ms TTL=125
Ping statistics for 198.165.5.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 1ms, Maximum = 10ms, Average = 3ms
C:\>

Experiment No: 07

Experiment Name : To configure virtual local area network(VLAN)

Apparatus:
1.Cisco Packet Tracer
2. Computer
3. Switch
4.Copper Straight through cable
5.Copper Cross-over cable

Procedure:

Step-1: At first open the cisco packet tracer .

Step-2: Take 8 computer PC0 ,PC1,PC2,PC3,PC4,PC5,PC6 and PC7 . Take 2 switch . The model of switch is 2960-24.

Step-3: Take a copper straight through cable to connect switch to computer. Take a copper cross-over cable to connect switch to switch.

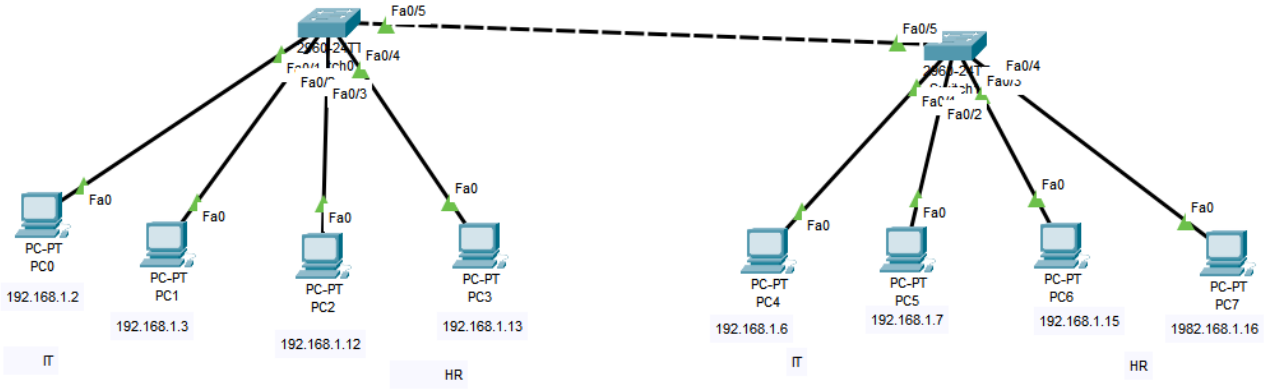


Figure-01 : Setup Layout

Step-4: IP address configuration for PC0, PC1 , PC2,PC3,PC4 ,PC5,PC6 and PC7. At first click PC0 ,desktop then IP configuration . Then set the IP address of computers.

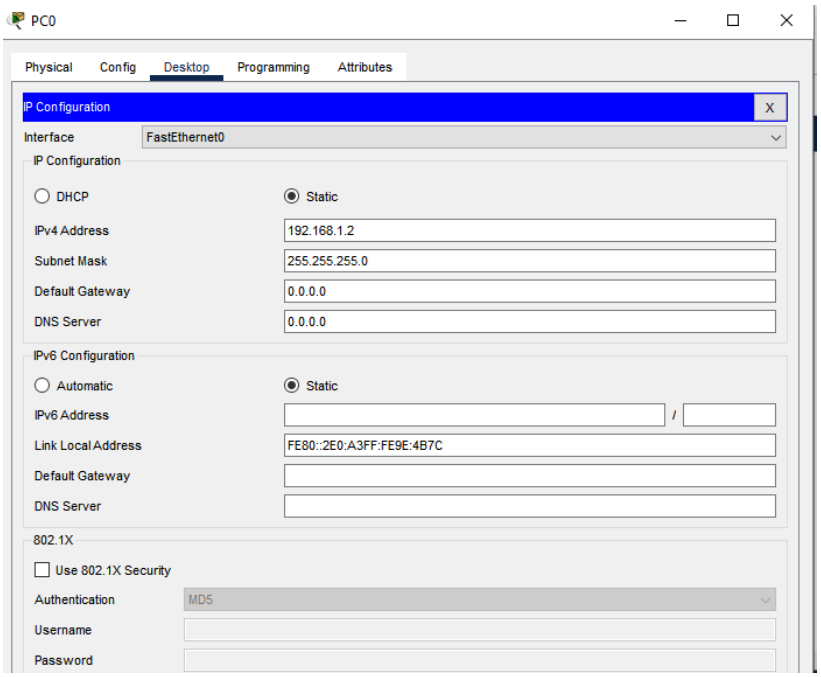


Figure-02: PC0 IP address and gateway setup

Step-5: Switch Configuration

VLAN Configuration for switch0:

switch>en
switch#configure terminal
switch(config)#VLAN 10
switch(config-VLAN)#name IT
switch(config-VLAN)#exit
switch(config)#VLAN 20
switch(config-VLAN)#name HR
switch(config-VLAN)#exit
switch(config)#exit
switch#
switch# show VLAN brief

Next VLAN configuration for switch to follow this step.

```
switch>en
switch#configure terminal
switch(config)#interface fastethernet 0/1
switch(config-if)#switchport access VLAN 10
switch(config-if)#exit
switch(config)#interface fastethernet 0/2
switch(config-if)#switchport access VLAN 10
switch(config-if)#exit
switch(config)#interface fastethernet 0/3
switch(config-if)#switchport access VLAN 20
switch(config-if)#exit
switch(config)#interface fastethernet 0/4
switch(config-if)#switchport access VLAN 20
switch(config-if)#exit
switch(config)#exit
switch#
switch#show VLAN brief
```

Next VLAN configuration for switch1 to follow this step.

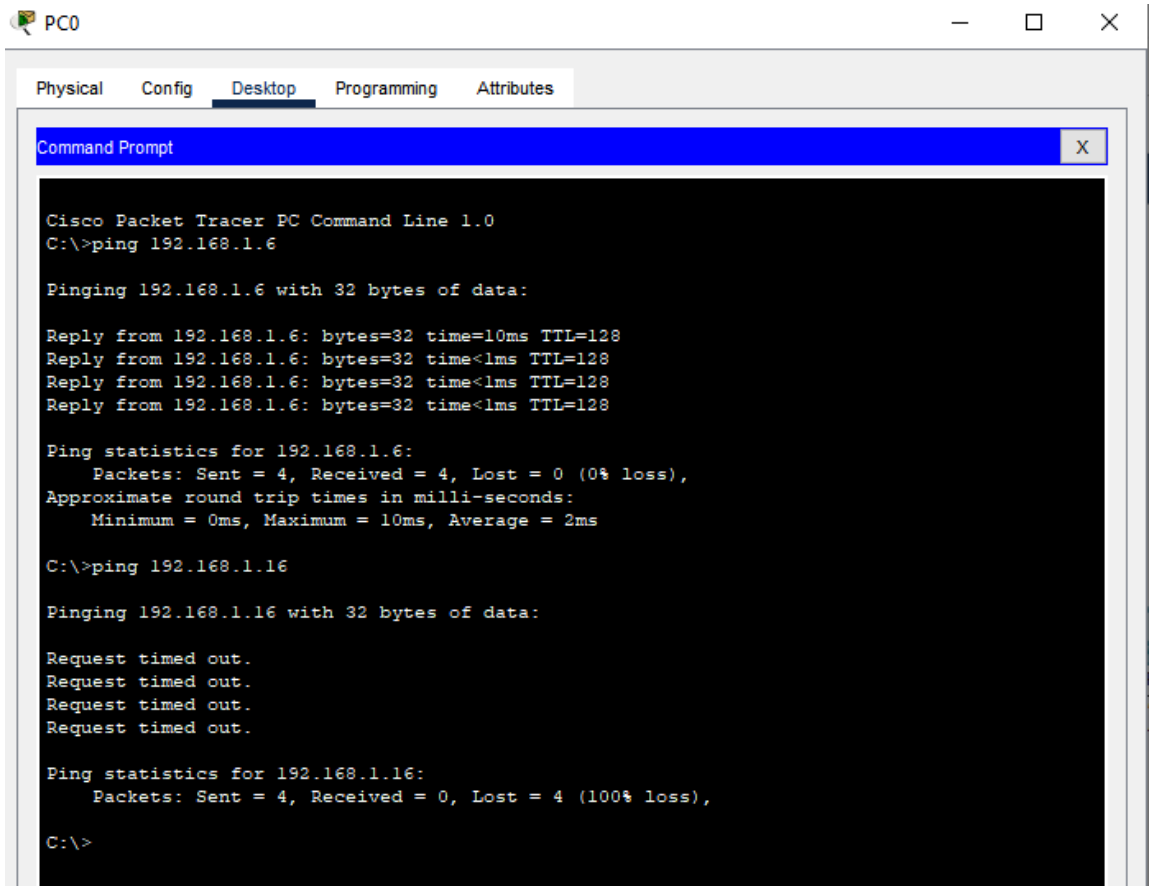
Switch Configuration for switch0:

```
switch>en
switch#configure terminal
switch(config)#interface fastethernet 0/5
switch(config-if)#switchport mode trunk
switch(config-if)#exit
switch(config)#interface range fa0/1-fa0/4
switch(config-if-range)#switchport mode access
switch(config-if-range)#exit
switch(config)#exit
switch#
switch#wr
```

Next switch configuration for switch1 to follow this step.

Step-7: Open Command Prompt of PC0 and Sent Ping to PC4 and PC7.

Result:


PC0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
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=10ms 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 = 10ms, Average = 2ms
C:\>ping 192.168.1.16
Pinging 192.168.1.16 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.1.16:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>