

No of the Experiment: 05

Name of the Experiment: To configure Routing Information Protocol (RIP).

Procedure:

Step-1: Start

Step-2: Open Cisco Packet Tracer.

Step-3:

- (i) Drag and Drop Routers, Switches and PCs.
- (ii) Select cable and make sure a proper connection.
- (iii) Thus, we setup a cisco packet tracer according with this figure 5.1

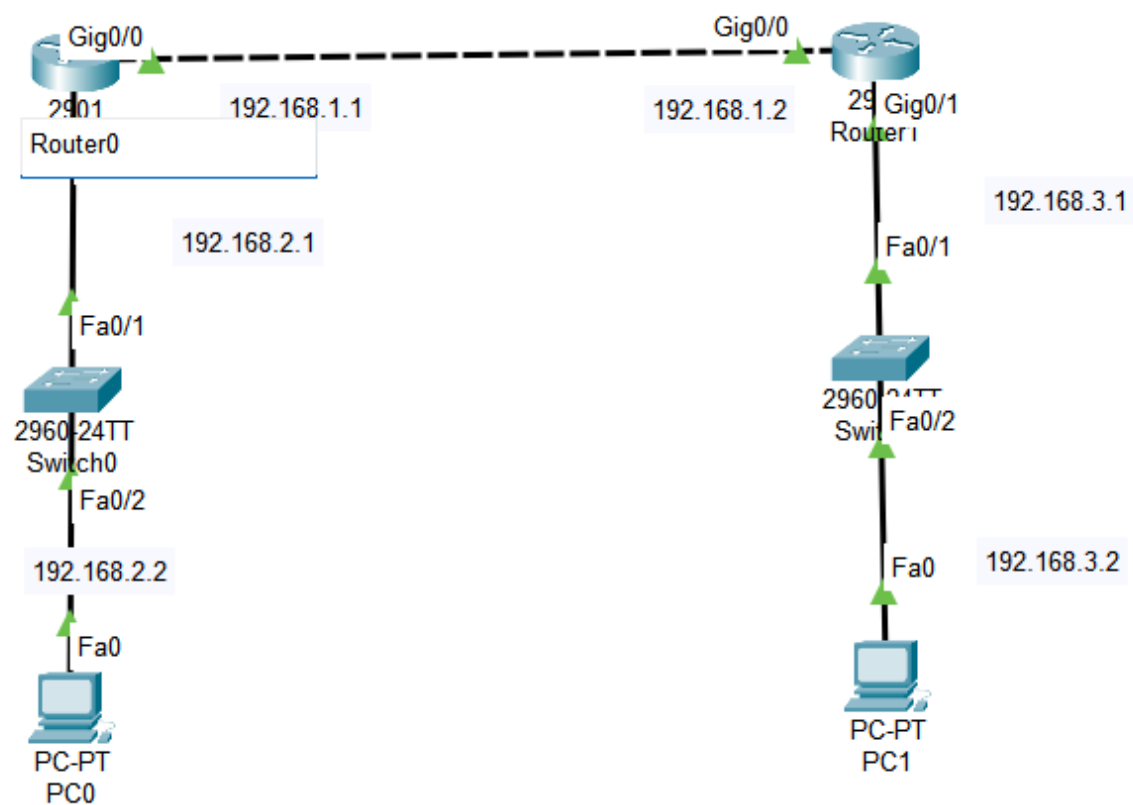


Figure: 5.1 Layout Setup

Step-4: IP Address Configuration for PC0, PC1. PC0 computers are under router0 and PC1 computers are under router1.

Step-5: IP Configuration for PC0, PC1.

Click PC1» Desktop » IP Configuration, and so on.

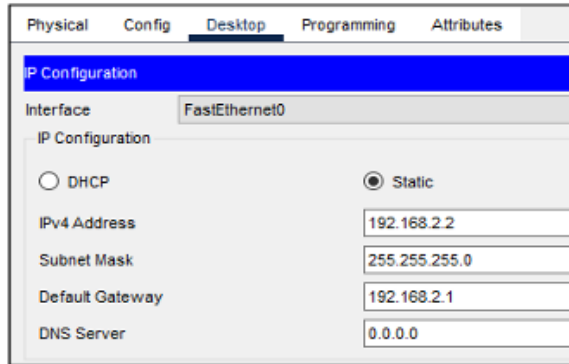


Figure-5.2: PC0 IP address and gateway setup.

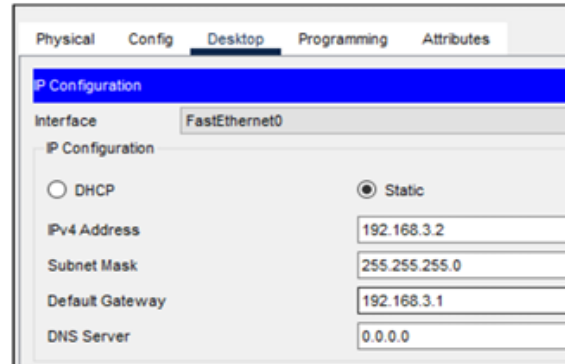


Figure-5.3: PC1 IP address and gateway setup.

Step-6: Router Configuration-

- Double click on router.
- Click on CLI Tab.
- First assign IP Address of on interface
- Assign RIP command.
- Mention RIP version
- Finally save this configuration.
- To set up routers, perform the following command.

IP Configuration Router0:

Router>en

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface gig 0/0

Router(config-if)#ip address 192.168.1.1 255.255.255.0

Router(config-if)#no shutdown

Router(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface gig 0/1

Router(config-if)#ip add 192.168.2.1 255.255.255.0

Router(config-if)#no shutdown

Router(config-if)#exit

IP Configuration Router1:

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

```
Router(config)#interface gig 0/0
Router(config-if)#ip address 192.168.1.2 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
Router(config-if)#exit
Router(config)#interface gig 0/1
Router(config-if)#ip add 192.168.3.1 255.255.255.0
Router(config-if)#no shutdown
Router(config-if)#exit
```

RIP Configuration Router0:

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router RIP
Router(config-router)#version 2 [same for all routers]
Router(config-router)#network 192.168.1.0
Router(config-router)#net 192.168.2.0
Router(config-router)#exit
Router(config)#exit
Router#
Router#wr
Building configuration...
[OK]
```

RIP Configuration Router1:

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router RIP
Router(config-router)#version 2 [same for all routers]
Router(config-router)#network 192.168.1.0
Router(config-router)#net 192.168.3.0
Router(config-router)#exit
```

Router(config)#exit

Router#

Router#wr

Building configuration...

[OK]

Step-7: Open Command Prompt of PC0 and send Ping to PC1

Output:

Packet Tracer PC Command Line 1.0

C:\>ping 192.168.3.2

Pinging 192.168.3.2 with 32 bytes of data:

Reply from 192.168.3.2: bytes=32 time<1ms TTL=126

Reply from 192.168.3.2: bytes=32 time=10ms TTL=126

Reply from 192.168.3.2: bytes=32 time=1ms TTL=126

Reply from 192.168.3.2: bytes=32 time=1ms TTL=126

Ping statistics for 192.168.3.2:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 10ms, Average = 3ms

Experiment No: 06

Name of the Experiment: To Configure Open Shortest Path First (OSPF) Routing Protocol.

Procedure:

Step-1: Start

Step-2: Open Cisco Packet Tracer.

Step-3:

- Drag and Drop Routers, Switches and PCs.
- Select cable and make sure a proper connection.
- Thus, we setup a cisco packet tracer according with this figure-6.1.

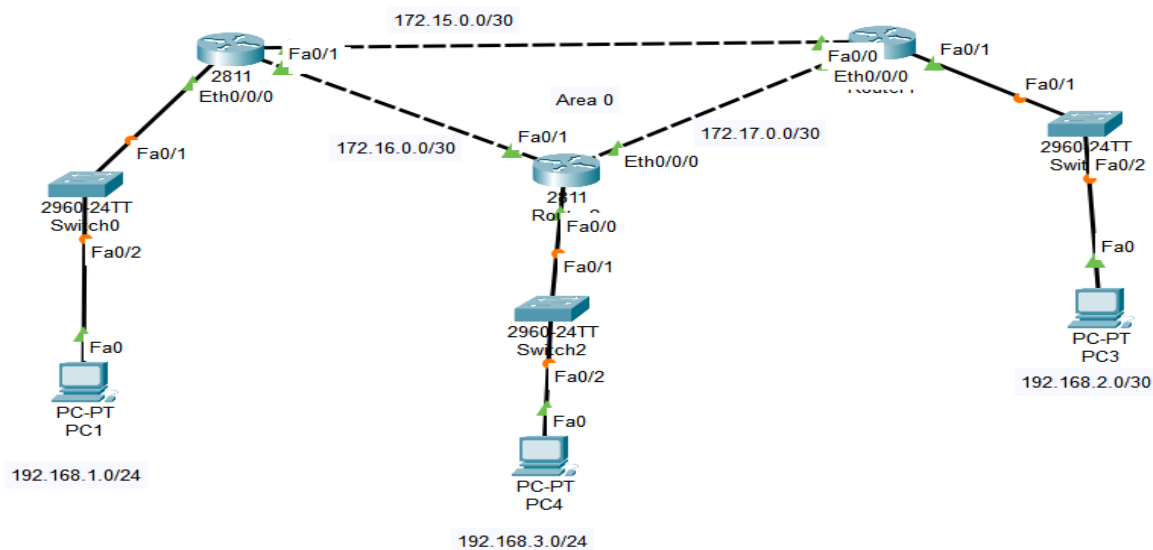


Figure: 6.1 Layout Setup

Step-4: IP Address Configuration for PC4, PC5. PC4 computers are under router0 and PC5 computers are under router1.

Step-5: IP Configuration for PC4, PC5.

Click PC4» Desktop » IP Configuration, and so on.

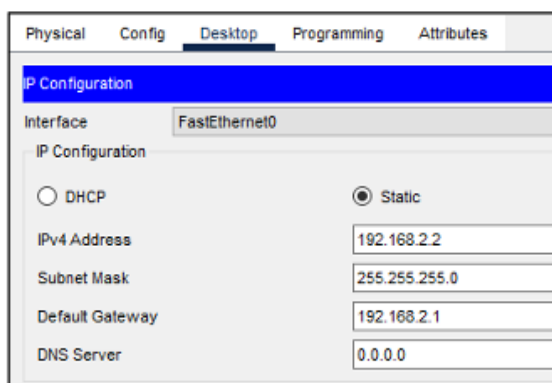


Figure-6.2: PC4 IP address and gateway setup.

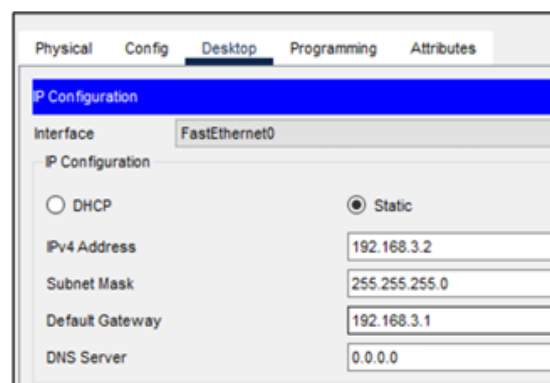


Figure-6.3: PC5 IP address and gateway setup.

Step-6: Router Configuration-

- Double click on router.
- Click on CLI Tab.
- First assign IP Address of on interface
- Assign OSPF command. (OSPF then numerical value such as 1,2,3)
- Mention Network then Wild card mask then area.
- Finally save this configuration.
- To set up routers, perform the following command.

IP Configuration Router0:

Router>en

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface gig 0/0

Router(config-if)#ip address 192.168.1.1 255.255.255.0

Router(config-if)#no shutdown

Router(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface gig 0/1

Router(config-if)#ip address 192.168.2.1 255.255.255.0

Router(config-if)#no shutdown

IP Configuration Router1

Router>en

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#interface gig 0/0

Router(config-if)#ip address 192.168.1.2 255.255.255.0

Router(config-if)#no shutdown

Router(config-if)#

%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit

Router(config)#interface gig 0/1

Router(config-if)#ip add 192.168.3.1 255.255.255.0

Router(config-if)#no shutdown

OSPF Configuration Router0:

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#router ospf 1

Router(config-router)#network 192.168.1.0 0.0.0.255 area 0

Router(config-router)#network 192.168.2.0 0.0.0.255 area 0

Router(config-router)#exit

Router(config)#exit

Router#

Router#wr

Building configuration...

[OK]

OSPF Configuration Router1:

Router#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Router(config)#router ospf 1

Router(config-router)#network 192.168.1.0 0.0.0.255 area 0

Router(config-router)#network 192.168.3.0 0.0.0.255 area 0

Router(config-router)#exit

Router(config)#exit

Router#

Router#wr

Building configuration...

[OK]

Step-7: Open Command Prompt of PC4 and send Ping to PC5.

Output:

Packet Tracer PC Command Line 1.0

C:\>ping 192.168.3.2

Pinging 192.168.3.2 with 32 bytes of data:

Reply from 192.168.3.2: bytes=32 time<1ms TTL=126

Reply from 192.168.3.2: bytes=32 time=10ms TTL=126

Reply from 192.168.3.2: bytes=32 time<1ms TTL=126

Reply from 192.168.3.2: bytes=32 time=10ms TTL=126

Ping statistics for 192.168.3.2:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 10ms, Average = 5ms

Experiment No: 07

Name of the Experiment: To Configure Virtual Local Area Network (VLAN) Protocol.

Procedure:

Step-1: Start

Step-2: Open Cisco Packet Tracer.

Step-3:

- Drag and Drop Switches and PCs.
- Select cable and make sure a proper connections.
- Thus, we setup a cisco packet tracer according with this figure-7.1.

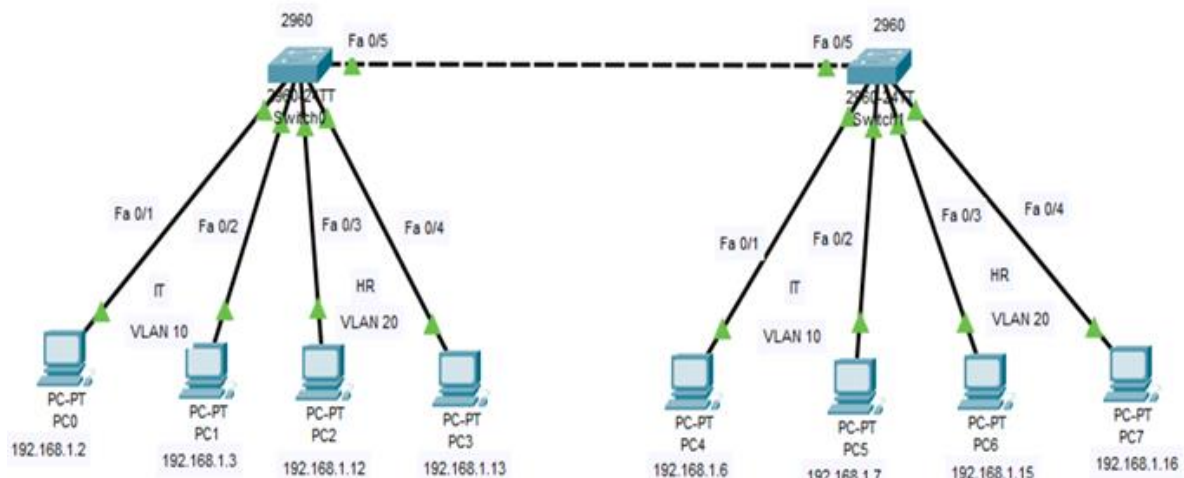


Figure-7.1: Setup Layout

Step-4: IP Address Configuration for PC0, PC1, PC2, PC3, PC4, PC5, PC6, and PC7. PC0, PC1, PC2, and PC3 computers are under Switch0 and PC4, PC5, PC6, and PC7 computers are under Switch1.

Step-5: IP Configuration for PC0, PC1, PC2, PC3, PC4, PC5, PC6, and PC7.

Click PC0» Desktop » IP Configuration, and so on.

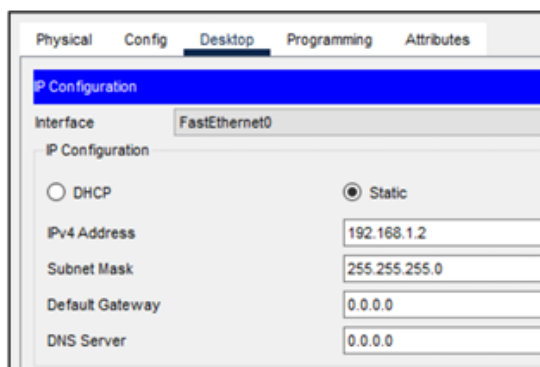


Figure-7.2: PC0 IP address and gateway setup.

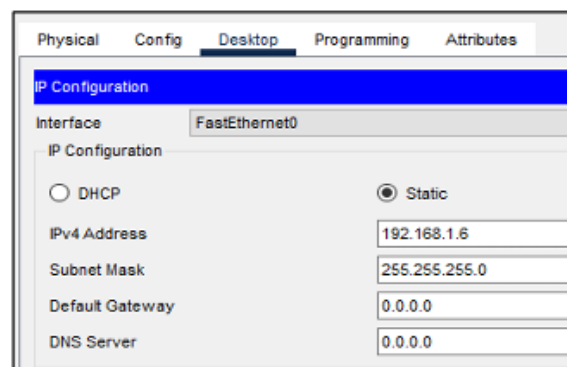


Figure-7.3: PC4 IP address and gateway setup.

Step-6: Switch Configuration-

- Double click on switch.
- Click on CLI Tab.
- To set up switch, perform the following command.

CLI Configuration (Switch0 and Switch2):

Switch>en

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

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#show VLAN brief

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

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#show VLAN brief

VLAN Configuration (Switch0 and Switch1):

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#interface fastEthernet 0/5

Switch(config-if)#switchport mode trunk

Switch(config-if)#exit

Switch(config)#interface range fastEthernet 0/1-fastEthernet 0/4

Switch(config-if-range)#switch mode access

Switch(config-if-range)#exit

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

Output:

Cisco Packet Tracer PC Command Line 1.0

***** PC0 to PC4 (Transfer Packet) *****

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 = 1ms, Average = 0ms

***** PC0 to PC7 (Does not Transfer Packet) *****

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),