Expt: 11

Date: 6.10.25

Aim: Simulate RIP using Cisco Packet Tracer

Initial IP Configuration

Device	Interface	IP Configuration	Connected with
PC0	Fast Ethernet	10.0.0.2/8	Router0's Fa0/1
Router0	Fa0/1	10.0.0.1/8	PC0's Fast Ethernet
Router0	S0/0/1	192.168.1.254/30	Router2's S0/0/1
Router0	S0/0/0	192.168.1.249/30	Router1's S0/0/0
Router1	S0/0/0	192.168.1.250/30	Router0's S0/0/0
Router1	S0/0/1	192.168.1.246/30	Router2's S0/0/0
Router2	S0/0/0	192.168.1.245/30	Router1's S0/0/1
Router2	S0/0/1	192.168.1.253/30	Router0's S0/0/1
Router2	Fa0/1	20.0.0.1/30	PC1's Fast Ethernet
PC1	Fast Ethernet	20.0.0.2/30	Router2's Fa0/1

Assign IP address to PCs

CLICK PC device → Desktop Menu → IP config

IP address as follows:

IP Configuration

Interface   FastEthernet0
IP Configuration

◯ DHCP   ⦿ Static
IPv4 Address
                            10.0.0.2
Subnet Mask
                            255.0.0.0
Default Gateway
                            10.0.0.1
DNS Server
                            0.0.0.0

IP Configuration

Interface   FastEthernet0
IP Configuration

◯ DHCP   ⦿ Static
IPv4 Address
                            20.0.0.2
Subnet Mask
                            255.255.255.252
Default Gateway
                            20.0.0.1
DNS Server
                            0.0.0.0

Assign IP address to interfaces of Routers

Click Router Device → CLI to access the command prompt of Router 0

The following commands are typed and configured the Router.

Router 0

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fa0/1
Router(config-if)#ip address 10.0.0.1 255.0.0.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed st

Router(config-if)#exit
Router(config)#interface s0/0/0
Router(config-if)#ip address 192.168.1.249 255.255.255.252
Router(config-if)#clock rate 64000
Router(config-if)#bandwidth 64
Router(config-if)#no shutdown

%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
Router(config-if)#exit
Router(config)#interface s0/0/1
Router(config-if)#ip address 192.168.1.254 255.255.255.252
Router(config-if)#clock rate 64000
Router(config-if)#bandwidth 64
Router(config-if)#no shutdown
```

Router 2

```
Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface fa0/1
Router(config-if)#ip address 20.0.0.1 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

Router(config-if)#exit
Router(config)#interface s0/0/0
Router(config-if)#ip address 192.168.1.245 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up

Router(config-if)#exit
Router(config)#in
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

% Incomplete command.
Router(config)#interface s0/0/1
Router(config-if)#ip address 192.168.1.253 255.255.255.252
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up
```

Configure RIP routing protocol

- Enable RIP routing protocol from global configuration mode
- Tell RIP routing protocol which networks to advertise.

Configure in Router0, 1, 2

→ Router0

router rip command tell router to enable the RIP routing protocol

```
%LINEPROTO-5-UPDOWN: Line protocol on Interf
Router(config)#router rip
Router(config-router)#network 10.0.0.0
Router(config-router)#network 192.168.1.248
Router(config-router)#network 192.168.1.252
```

network command allows to specify the networks which we want to advertise.

The same step is followed for Router 1,2

Router 1:

```
%LINEPROTO-5-UPDOWN: Line protocol on Interf.

Router(config)#router rip
Router(config-router)#network 192.168.1.244
Router(config-router)#network 192.168.1.248
```

Router 2:

```
Router(config)#
%LINEPROTO-5-UPDOWN: Line protocol on Interf

Router(config)#router rip
Router(config-router)#network 192.168.1.244
Router(config-router)#network 192.168.1.252
Router(config-router)#network 20.0.0.0
```

To verify the full setup, use Ping command.

Network:
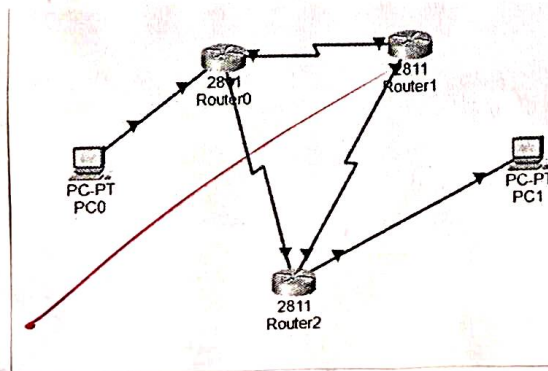
Access the command prompt of PC1, PC0 and test the connectivity.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=2ms TTL=126
Reply from 10.0.0.2: bytes=32 time=21ms TTL=126
Reply from 10.0.0.2: bytes=32 time=18ms TTL=126
Reply from 10.0.0.2: bytes=32 time=17ms TTL=126

Ping statistics for 10.0.0.2:  I
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 21ms, Average = 14ms
```

```
C:\>tracert 10.0.0.2

Tracing route to 10.0.0.2 over a maximum of 30 hops:

  1   0 ms      0 ms      0 ms    20.0.0.1
  2   1 ms      2 ms      2 ms    192.168.1.254
  3   0 ms     20 ms      0 ms    10.0.0.2

Trace complete.

C:\>
```

```
Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 20.0.0.2

Pinging 20.0.0.2 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.2: bytes=32 time=5ms TTL=126
Reply from 20.0.0.2: bytes=32 time=15ms TTL=126
Reply from 20.0.0.2: bytes=32 time=18ms TTL=126

Ping statistics for 20.0.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 5ms, Maximum = 18ms, Average = 12ms
```

```
C:\>tracert 20.0.0.2

Tracing route to 20.0.0.2 over a maximum of 30 hops:

  1   0 ms      0 ms      0 ms    10.0.0.1
  2   2 ms     14 ms      0 ms    192.168.1.253
  3   2 ms      9 ms      2 ms    20.0.0.2

Trace complete.

C:\>
```

RESULT:

The RIP was successfully configured and simulated using Cisco Packet Tracer.
Hence, the RIP based internetwork communication was verified successfully.