

SYCS CN

PRACTICAL 5

AIM :

Using Packet Tracer, create a network with three routers with RIPv1 and each router associated network will have a minimum of three PCs. Show Connectivity

Routing Information Protocol (RIP)

There are two versions of RIP: RIPv1 and RIPv2.

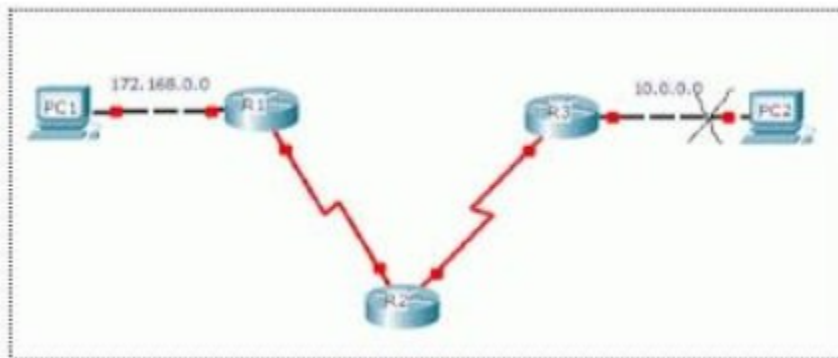
Comparing between RIPv1 and RIPv2

1. Both RIPv1 and RIPv2 have the Administrative distance 120.

2. Both RIPv1 and RIPv2 are distance vector routing protocol.

Both RIPv1 and RIPv2's metric is hop count. Maximum hop count = 15. Max routers = 16.

Consider the following case

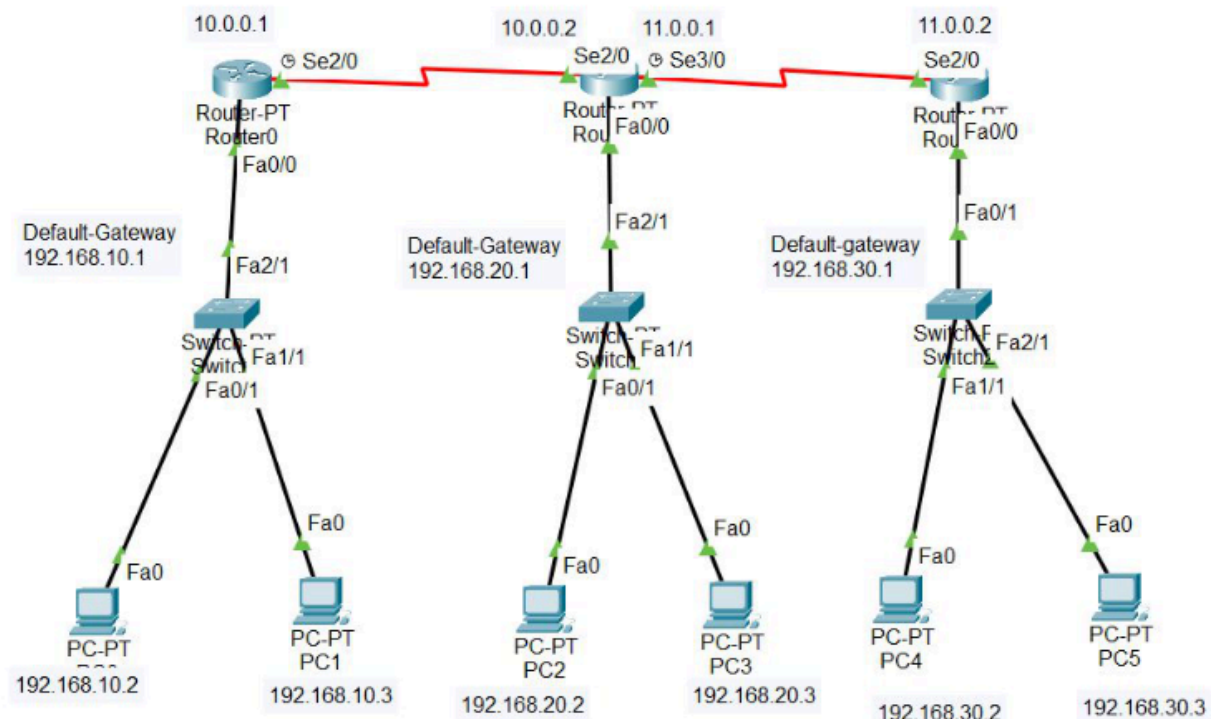


Here all routers are running RIP and network 10.0.0.0 goes down. After hold timer expires, that network will be advertised by metric 16 and everyone will know that the network is down and that network will be seen in routing table as possibly down.

4. Both RIPv1 and RIPv2 send routing updates or complete routing table or broadcast every 30 seconds. i.e. The default routing update period for both version of RIP is 30 seconds. i.e. Both have the same timers.

5. Both RIPv1 and RIPv2 use split horizon to prevent routing loops.
6. Both RIPv1 and RIPv2 are configured with router rip.
7. Network command tells both RIPv1 and RIPv2 to send hellos, out an interface, to find neighbors and to advertise routes.

Consider the following example of RIP using packet tracer



Now we configure the PC's and Routers as follow

RIP Routes for Router0 are given below:

```
Router(config)#network 192.168.10.0
Router(config)#network 10.0.0.0
```

RIP Routes for Router1 are given below:

```
Router(config)#network 192.168.20.0
Router(config)#network 10.0.0.0
Router(config)#network 11.0.0.0
```

RIP Routes for Router2 are given below:

```
Router(config)#network 192.168.30.0
```

Step 4: (configure Router 0)

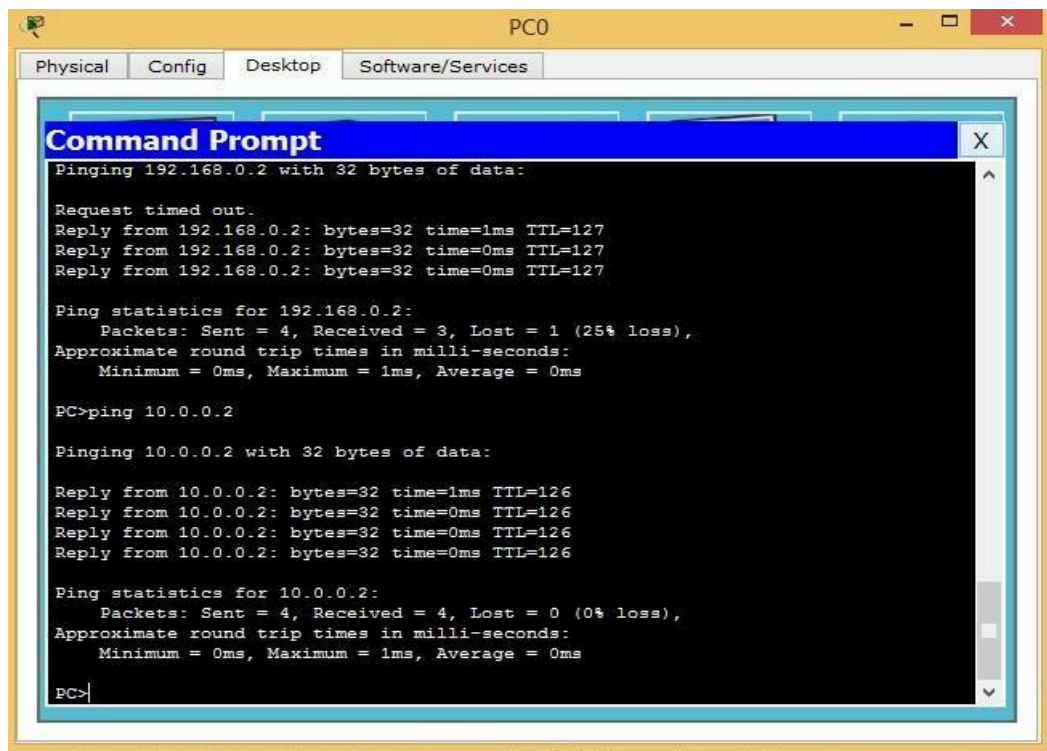
Step 5: (configure Router 1)

Now we configure the routing table for both the routers

Routing table for Router 1

Routing table for Router 2

Now we use the ping command to check the working



The screenshot shows a PC0 window with a Command Prompt open. The Command Prompt displays the results of two ping commands. The first command is 'ping 192.168.0.2', which shows a request timed out, followed by three successful replies from 192.168.0.2 with 32 bytes of data, 1ms time, and TTL=127. The ping statistics for 192.168.0.2 show 4 packets sent, 3 received, 1 lost (25% loss), and approximate round trip times in milliseconds: Minimum = 0ms, Maximum = 1ms, Average = 0ms. The second command is 'ping 10.0.0.2', which shows four successful replies from 10.0.0.2 with 32 bytes of data, 1ms time, and TTL=126. The ping statistics for 10.0.0.2 show 4 packets sent, 4 received, 0 lost (0% loss), and approximate round trip times in milliseconds: Minimum = 0ms, Maximum = 1ms, Average = 0ms.

```
PC0
Physical Config Desktop Software/Services

Command Prompt
Pinging 192.168.0.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.0.2: bytes=32 time=1ms TTL=127
Reply from 192.168.0.2: bytes=32 time=0ms TTL=127
Reply from 192.168.0.2: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=1ms TTL=126
Reply from 10.0.0.2: bytes=32 time=0ms TTL=126
Reply from 10.0.0.2: bytes=32 time=0ms TTL=126
Reply from 10.0.0.2: bytes=32 time=0ms TTL=126

Ping statistics for 10.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>
```

Hence the RIP protocol has been studied.