

## 1b) RIP Simulation

Aim: To Simulate RIP (Routing Information Protocol) in Cisco Packet Tracer and verify dynamic routing between routers.

### Initial IP Configuration:-

- \* PCs and routers assigned IP addresses on FastEthernet and Serial interfaces as per topology.
- \* Serial interfaces on DCE side Configured with clock rate & Bandwidth.
- \* Interfaces brought up using no shutdown command.

### RIP Configuration:-

- \* Enable RIP on each router using router rip command.
- \* Advertise directly connected networks using network <network-address> command.

### Network Connectivity Verification:-

- \* Use ping from PC0 to PC1 to verify end-to-end connectivity.

\* Two routes exist between PC0 & PC1; RIP selects the route with least hop count by default.

- \* Use traceroute to verify the path taken by packets.

### Dynamic Route Failure:-

- \* Simulated link failure by discounting Router 0 Serial 0/0/1 to Router 2 Serial 0/0/1.

\* RIP automatically rerouted traffic via alternate path (through Router 1) without manual intervention.

Command Prompt

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:

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:\>

Result:

Static routing and RIP were successfully configured in Cisco Packet Tracer; connectivity between PC's was verified, and backup/alternate routes worked correctly during link failure.