

### (b) 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 Fast Ethernet and Serial interfaces as per topology.
- \* Serial interfaces on DG side Configured with clock rate & Bandwidth.
- \* Interface brought up Using no Shutdown command.

RIP Configuration:-

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

Dynam. Route Failure:-

- \* Simulated link failure by disconnecting Router 1 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 PCs  
was verified, and backup/alternate routes worked  
correctly during link failure