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## OPEN SHORTEST PATH FIRST (OSPF) & BORDER GATEWAY PROTOCOL (BGP) ROUTING

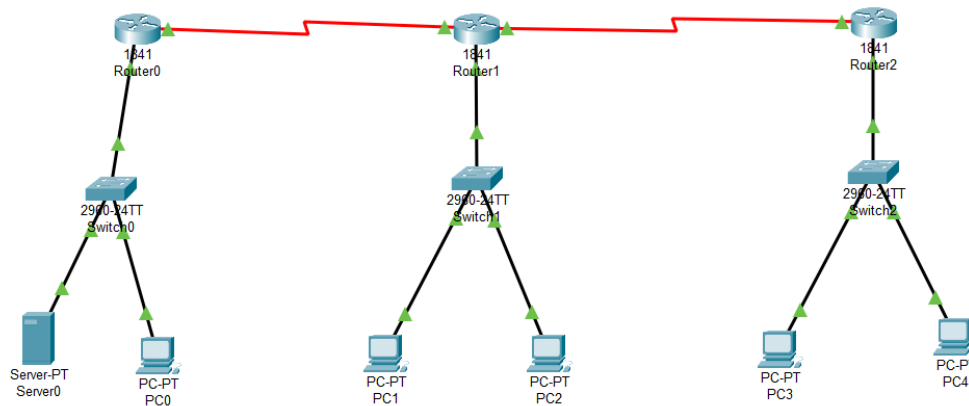
Date :- 24-11-2022

Aim :- To demonstrate Open Shortest Path First(OSPF) and Border Gateway Protocol (BGP) routing in Cisco Packet Tracer.

Tools Required :- Windows OS , Cisco Packet Tracer.

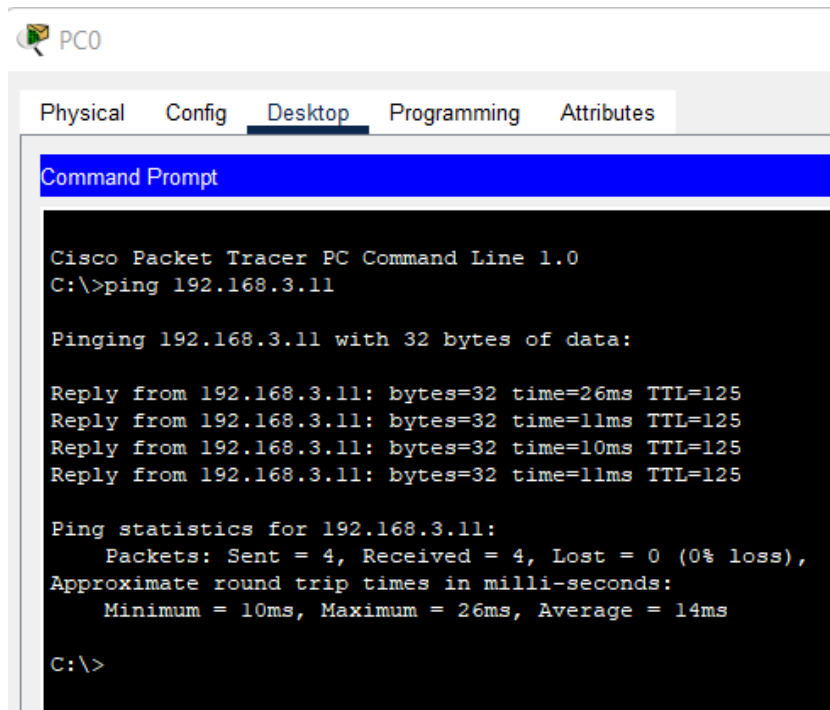
Procedure :-

Taking end devices , switches , routers and connecting them with their respective connecting cables as shown in below image.



Next, assigning all IP addresses , Default Gateway addresses , Interface addresses to the end devices and routers.





The screenshot shows a Cisco Packet Tracer PC interface for PC0. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The command prompt shows the execution of a ping command to 192.168.3.11, resulting in four successful replies with varying round-trip times (26ms, 11ms, 10ms, 11ms) and a TTL of 125. The ping statistics indicate 4 packets sent, 4 received, and 0 lost (0% loss), with an average round-trip time of 14ms.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.3.11

Pinging 192.168.3.11 with 32 bytes of data:

Reply from 192.168.3.11: bytes=32 time=26ms TTL=125
Reply from 192.168.3.11: bytes=32 time=11ms TTL=125
Reply from 192.168.3.11: bytes=32 time=10ms TTL=125
Reply from 192.168.3.11: bytes=32 time=11ms TTL=125

Ping statistics for 192.168.3.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 26ms, Average = 14ms

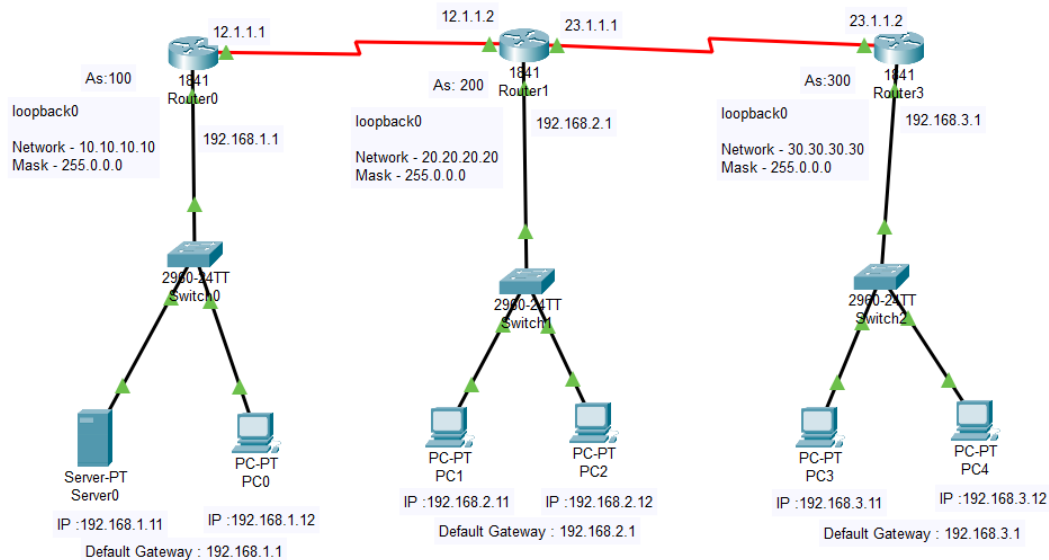
C:\>
```

Thus the Open Shortest Path First routing is configured.

## **BGP(Border Gateway Protocol)**

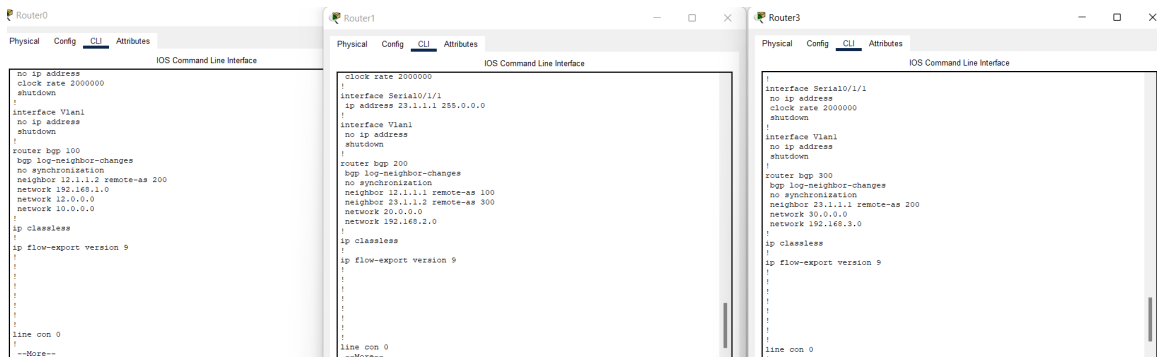
Border Gateway Protocol prefers best path. It is the inter-domain routing protocol.

Configuring the end devices , routers , ip addresses , connectivity as shown below.



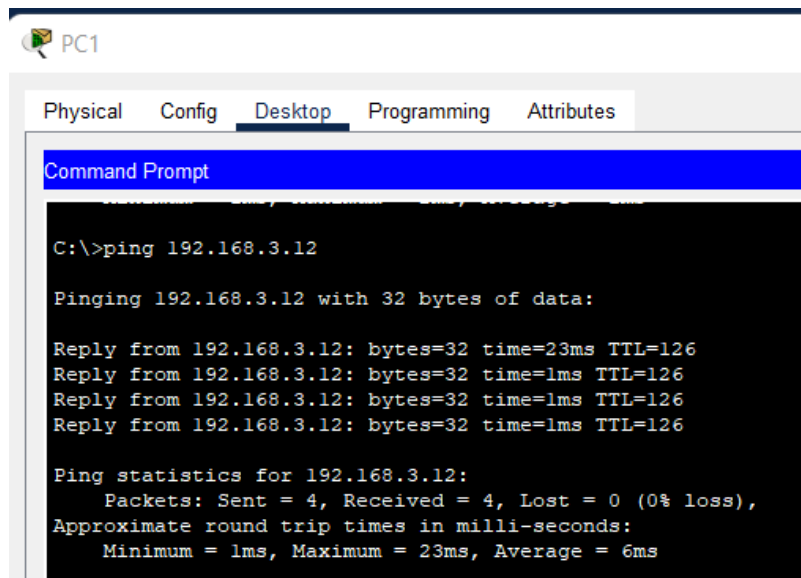
The use of a loopback interface ensures that the neighbor stays up and is not affected by malfunctioning hardware, the main benefit from using loopbacks is that it will not bring down the BGP session when there are multiple paths between the BGP peers.

Assigning Border Gateway Protocol routing to the above router configuration.



BGP Routing is configured. Ensuring by using PING command.

Pinging 192.168.3.12 from 192.168.2.11



Thus, BGP routing is configured.

**Result :** Demonstrating Open Shortest Path First(OSPF) and Border Gateway Protocol (BGP) routing in Cisco Packet Tracer is successfully done.