Assignment

Network systems assignment

OBJECTIVE:

Design and configure a network in Cisco Packet Tracer with five separate LANs. Each LAN contains six PCs connected to a switch. Connect these five LANs using five routers through Serial link. Implement dynamic routing using OSPF protocol between the routers to establish communication between the LANs. Assign IP addresses to each device manually, as per the network details provided below. Verify the connectivity by pinging devices across the five LANs.

Following are the network details:

Network 1 (Class C):
Starting IP Address: 194.178.19.10
Router0 (Ethernet Interface): 194.178.19.1

Network 2 (Class B):

Starting IP Address: 171.15.12.10
Router1 (Ethernet Interface): 171.15.12.1

Network 3 (Class C):

Starting IP Address: 196.188.27.10
Router2 (Ethernet Interface): 196.188.27.1

Network 4 (Class B):

Starting IP Address: 173.17.1.10
Router3 (Ethernet Interface): 173.17.1.1

Network 5 (Class B):

Starting IP Address: 174.18.1.10
Router4 (Ethernet Interface): 174.18.1.1

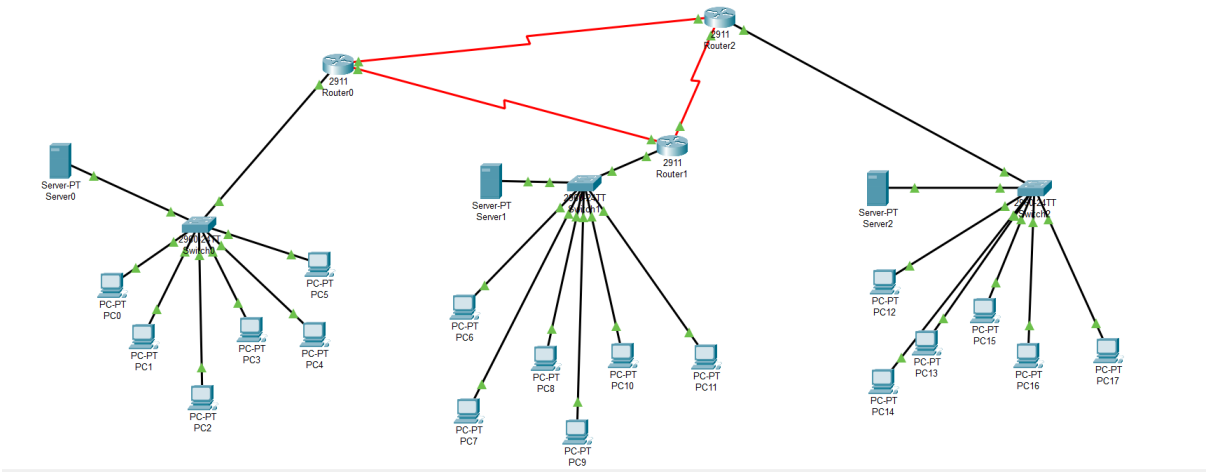
Router Interconnection:

Network Address of Router0 to Router1: 10.0.0.0
Network Address of Router1 to Router2: 11.0.0.0
Network Address of Router2 to Router3: 12.0.0.0
Network Address of Router3 to Router4: 13.0.0.0

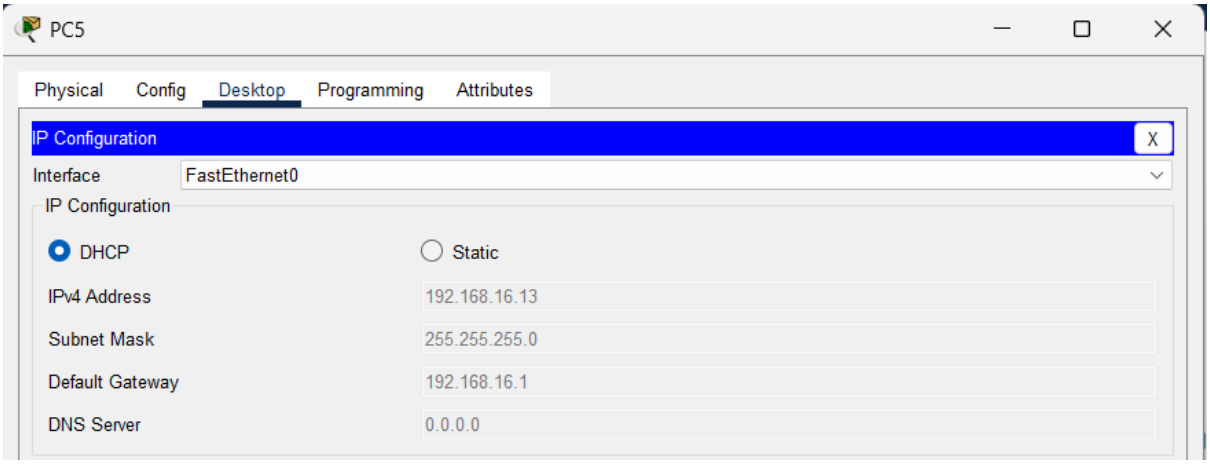
Establish a successful connection and verify the dynamic routing implementation. Attach all

screenshots (including IP configuration, OSPF routing configuration, successful ping outputs, and network structure) along with a description in a PDF file and submit.

Network Structure



IP configuration



Ping Output

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC11	ICMP		0.000	N	0	(edit)	(delete)

Simulation Panel

Event List

Vis.	Time(sec)	Last Device
	0.000	--
	0.001	PC0
	0.002	Switch0
	0.003	Router0
	0.004	Router1
	0.005	Switch1

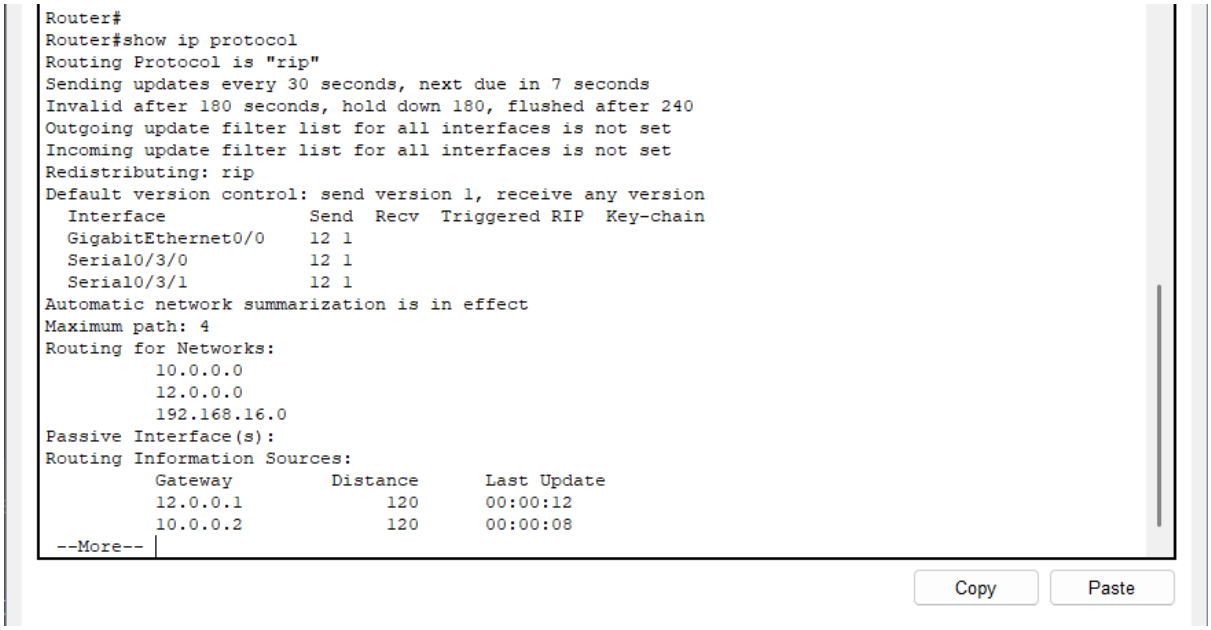
IP route

```
Router#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.0.0.0/8 is directly connected, Serial0/3/0
L       10.0.0.1/32 is directly connected, Serial0/3/0
R    11.0.0.0/8 [120/1] via 12.0.0.1, 00:00:10, Serial0/3/1
                [120/1] via 10.0.0.2, 00:00:06, Serial0/3/0
     12.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       12.0.0.0/8 is directly connected, Serial0/3/1
L       12.0.0.2/32 is directly connected, Serial0/3/1
R    172.16.0.0/16 [120/1] via 10.0.0.2, 00:00:06, Serial0/3/0
R    192.168.15.0/24 [120/1] via 12.0.0.1, 00:00:10, Serial0/3/1
     192.168.16.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.16.0/24 is directly connected, GigabitEthernet0/0
 --More--
```

Copy Paste



Submitted By Neeraj Jayesh

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