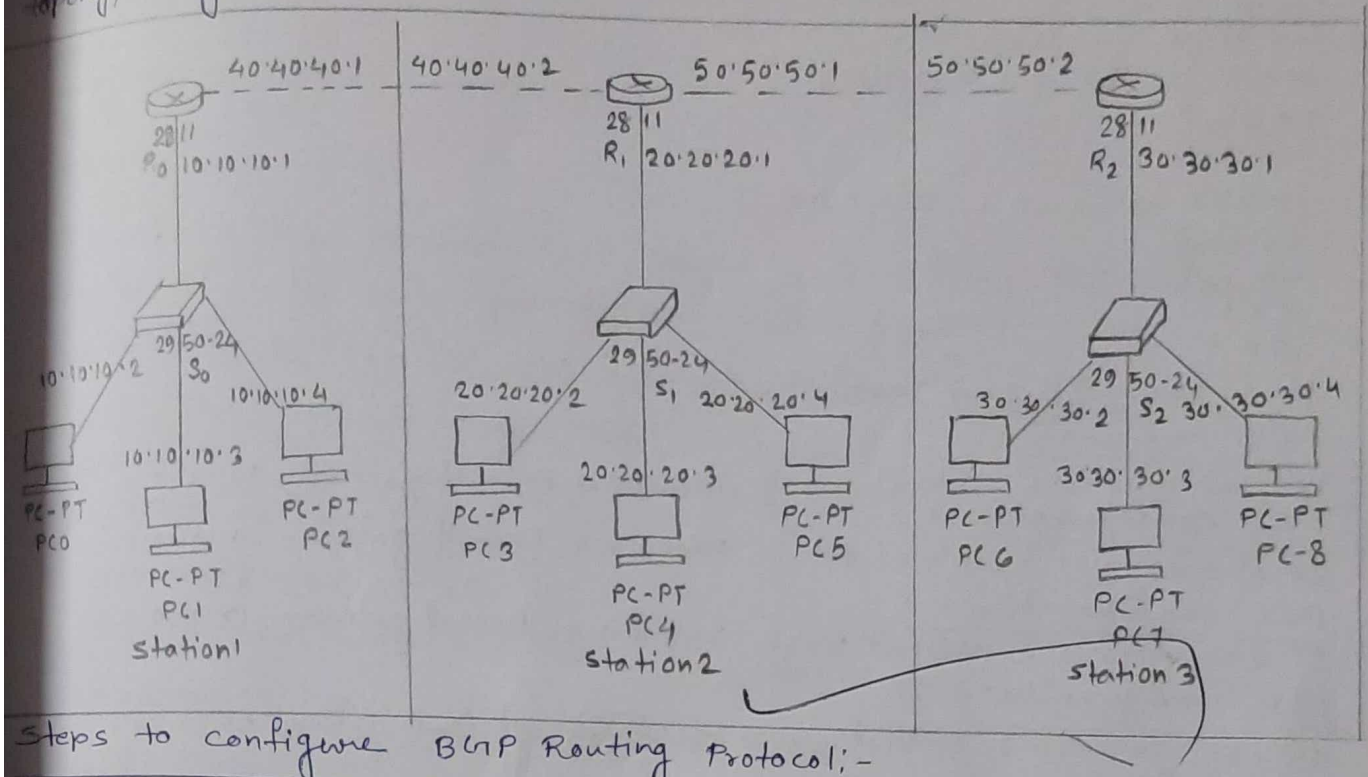
Problem statement:- Implement BGP Routing Protocol in a network topology using CISCO Packet Tracer



Steps to configure BGP Routing Protocol:-

i) A virtual LAN setup of a network topology according to the diagram is created. It contains Routers, switches and PCs as end point of the network.

ii) All the devices are connected with the required cable.

iii) Configure IP address on PC's and router interfaces.

Ro configuration:-

```
en
config t
int fo/0
ip add 10.10.10.1 255.0.0.0
no shut
int fo/1
ip add 40.40.40.1 255.0.0.0
no shut
wr
exit
exit
```

R1 configuration:-

```
en
config t
int fo/0
ip add 20.20.20.1 255.0.0.0
no shut
int fo/1
ip add 50.50.50.1 255.0.0.0
no shut
int fi/0
ip add 40.40.40.2 255.0.0.0
no shut
wr
exit
exit
```

R2 configuration:-

```
en
config t
int fa0/0
ip add 30.30.30.1 255.0.0.0
no shut
int fa/1
ip add 50.50.50.2  255.0.0.0
no shut
wr
exit
exit
```

Now the IP configurations for the PCs:-

PC 0 configuration:-

IP add 10.10.10.2, subnet mask 255.0.0.0, Default gateway 10.10.10.1

PC 1 configuration:-

IP add 10.10.10.3, subnet mask 255.0.0.0, Default gateway 10.10.10.1

PC 2 configuration:-

IP add 10.10.10.4, subnet mask 255.0.0.0, Default gateway 10.10.10.1

PC 3 configuration:-

IP add 20.20.20.2, subnet mask 255.0.0.0, Default gateway 20.20.20.1

PC 4 configuration:-

IP add 20.20.20.3, subnet mask 255.0.0.0, Default gateway 20.20.20.1

PC 5 configuration:-

IP add 20.20.20.4, subnet mask 255.0.0.0, Default gateway 20.20.20.1

PC 6 configuration:-

IP add 30.30.30.2, subnet mask 255.0.0.0, Default gateway 30.30.30.1

PC 7 configuration:-

IP add 30.30.30.3, subnet mask 255.0.0.0, Default gateway 30.30.30.1

PC 8 configuration:-

IP add 30.30.30.4, subnet mask 255.0.0.0, Default gateway 30.30.30.1

iv) Configure BGP on the station 1, station 2, station 3

station 1:

```
router bgp 1
network 10.0.0.0
network 40.0.0.0
neighbor 40.40.40.2 remote-as 2
exit
exit
```

station 2:

```
router bgp 2
network 20.0.0.0
network 40.0.0.0
network 50.0.0.0
neighbor 40.40.40.1 remote-as 1
neighbor 50.50.50.2 remote-as 3
exit
exit
```

Station 3:

```
router bgp3
network 50.00.0
network 30.0.0.0
neighbor 50.50.50.1 remote-as2
exit
exit
```

v) To check the connectivity, a packet is sent through the network

vi) To verify BGP, the following command is used:

show ip route bgp: Displays the BGP routing table of the router.

Output:- The BGP Routing Protocol is configured. A packet is successfully sent from source PCB to destination PC0

The BGP routing table is displayed:

```
B  10.0.0.0/8 [20/0] via 50.50.50.1 01:11:59
B  20.0.0.0/8 [20/0] via 50.50.50.1 01:11:59
B  40.0.0.0/8 [20/0] via 50.50.50.1 01:11:59
```

Remarks:- The network topology is created and configurations are made on the routers and the PCs. BGP routing protocol is configured and the routing table is shown.