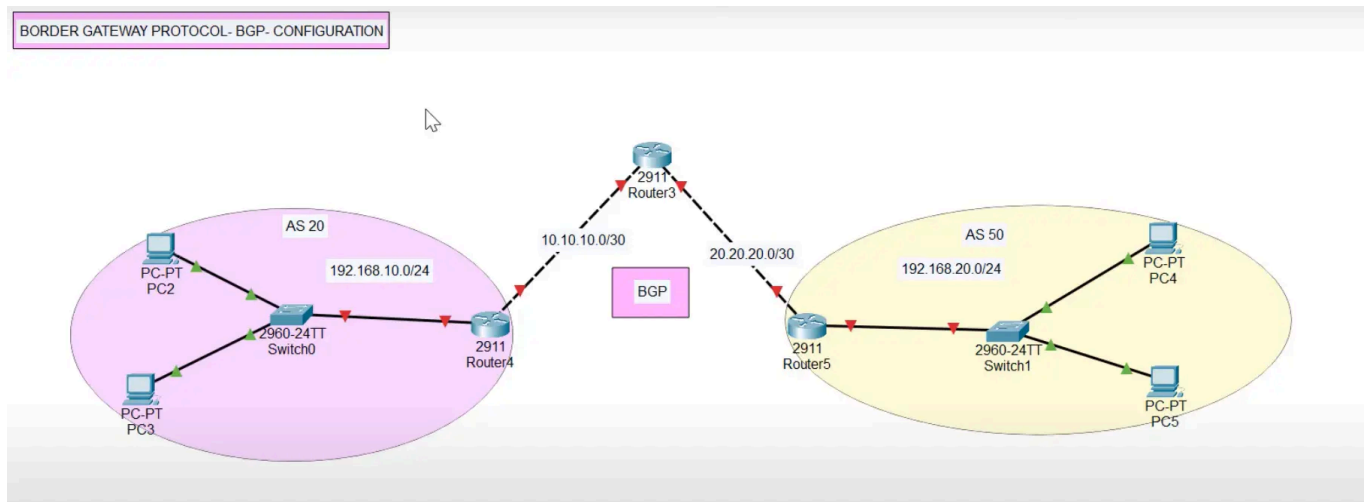


BGP



To configure the topology shown in the image for Border Gateway Protocol (BGP), follow the steps below:

Topology Overview

- **Autonomous System (AS) 20:**
 - **Router4** is the BGP router in AS 20, with a local network of `192.168.10.0/24`.
 - **Router3** connects AS 20 to AS 50.
 - The link between **Router4** and **Router3** is `10.10.10.0/30`.
- **Autonomous System (AS) 50:**
 - **Router5** is the BGP router in AS 50, with a local network of `192.168.20.0/24`.
 - The link between **Router5** and **Router3** is `20.20.20.0/30`.

Step 1: Build the Topology in Packet Tracer

1. Devices:

- **Routers:** 3 routers (2911 models)
- **Switches:** 2 switches (2960-24TT models)
- **End Devices:** 4 PCs

2. Connections:

- Connect the routers and switches as shown in the topology.
- Ensure correct cabling between devices (automatic cable selection will work for the basic setup).

Step 2: Assign IP Addresses

1. Router Interfaces:

- **Router3:**
 - Interface towards Router4: `10.10.10.1/30`
 - Interface towards Router5: `20.20.20.1/30`
- **Router4:**
 - Interface towards Router3: `10.10.10.2/30`
 - LAN interface: `192.168.10.1/24`
- **Router5:**
 - Interface towards Router3: `20.20.20.2/30`
 - LAN interface: `192.168.20.1/24`

2. Configure IP addresses on the PCs:

- **PC2 and PC3** (in AS 20): Use IPs in the `192.168.10.0/24` network (e.g., `192.168.10.2/24`, `192.168.10.3/24`).

- **PC4 and PC5** (in AS 50): Use IPs in the `192.168.20.0/24` network (e.g., `192.168.20.2/24`, `192.168.20.3/24`).

Step 3: Configure BGP on Routers

1. Router4 Configuration (AS 20):

```
enable
configure terminal
router bgp 20
bgp log-neighbor-changes
neighbor 10.10.10.1 remote-as 50
network 192.168.10.0 mask 255.255.255.0
end
```

2. Router5 Configuration (AS 50):

```
enable
configure terminal
router bgp 50
bgp log-neighbor-changes
neighbor 20.20.20.1 remote-as 20
network 192.168.20.0 mask 255.255.255.0
end
```

3. Router3 Configuration (Border Router between AS 20 and AS 50):

```
enable
configure terminal
router bgp 20
bgp log-neighbor-changes
neighbor 10.10.10.2 remote-as 20
```

```
neighbor 20.20.20.2 remote-as 50
end
```

Step 4: Verifying the BGP Configuration

1. Check BGP Neighbor Relationships:

On each router, use the following command to verify BGP neighbors:

```
show ip bgp summary
```

This will show if the routers have formed BGP peerings with their neighbors.

2. Check BGP Routing Table:

On each router, verify the BGP routes by using:

```
show ip route bgp
```

This should display routes learned via BGP, including routes from the other AS.

3. Ping Across the Network:

- Test connectivity between PCs in different ASes to verify that BGP is correctly routing traffic.
- For example, ping from a PC in AS 20 to a PC in AS 50.

Step 5: Saving the Configuration

After verifying that everything is working as expected, save the configuration on each router using:

write memory

This setup should successfully implement the BGP configuration in your Packet Tracer topology. If you need further assistance or encounter any issues, feel free to ask!