Lab Activity

Assigned IP addresses to router and switch by using Static & Dynamic Approach.

Use the following Device to perform the lab	
S.No	Devices Name
1	Cisco 2911 Router
2	Cisco 2960 Switch
3	DHCP Server

Use the Packet Tracer to perform the following Lab

"Automatically choose connection type" function

Objective:

The switch can have multiple IP addresses. Each IP address can be assigned to specified interfaces or ports, Link Aggregation Groups (LAGs), or Virtual Local Area Networks (VLANs). To remotely manage the device, an IP address must be defined to access the switch. This allows you to easily configure or troubleshoot the device through the web-based utility, Telnet, or Secure Shell (SSH). The IP address of the switch can be manually configured or automatically received from a Dynamic Host Configuration Protocol (DHCP) server.

Configure Static IP Address

Step 1. From the Privileged EXEC mode of the switch, enter the Global Configuration mode by entering the following:

```
Switch# Configure or configure terminal
```

Step 2. In the Global Configuration mode, enter the interface context by entering the following:

```
Switch (config) #interface [interface-id | vlan-id
```

In this example, interface vlan 1 is used. VLAN 1 is the default VLAN of the switch.

Step 3. Enter the IP address interface configuration command to define an IP address for an interface by entering either of the following:

ip address [ip-address] {{mask | prefix-length}}— Use the reload command to reload the switch immediately.

ip address [ip-address] {{mask | prefix-length}} [default-gateway-ip-address] — Use the reload {{in hhh:mm | mmm | at hh:mm [day month]}} command to specify scheduled switch reload.

The options are:

ip address — Specifies the IP address.

mask — Specifies the network mask of the IP address.

prefix-length — Specifies the number of bits that comprise the IP address prefix. The prefix length must be preceded by a forward slash (/). The range is 8 to 30.

```
Switch(config-if)#ip address 192.168.100.201 255.255.255.0
```

Step 4. (Optional) To remove an IP address from an interface, use the no form of the IP address command by entering the following:

```
Switch(config-if)#no ip address
```

Step 5. Enter the end command to go back to the Privileged EXEC mode of the switch

```
Switch(config-if)#end
```

Step 6. To display the IP address configuration and information on the interface, enter the following command in the Privileged EXEC mode:

```
Switch#show ip interface / show running-config /show ip interface brief
```

In this example, the IP address is 192.168.100.201 and the Type is Static.

Step 7. save the configured settings to the startup configuration file, enter the following:

```
Switch #copy running-config startup-config
```

Step 10. (Optional) Press Y for Yes or N for No on your keyboard once the Overwrite file [startupconfig]… prompt appears.

You should now have successfully configured the static IP address settings of your switch.

Configure the IP Address through DHCP

In this scenario, the switch is connected to a router, which acts as an active DHCP server. Follow the steps below to configure the IP address of the switch through DHCP.

Step 1. Connect your computer directly to the switch using a serial cable.

Step 2. From the Privileged EXEC mode of the switch, enter the Global Configuration mode by entering the following:

```
Switch#configure terminal
```

Step 3. In the Global Configuration mode, enter the interface context by entering the following:

```
Switch(config)#interface [interface id | vlan-id]
```

In this example, interface vlan 1 is used. VLAN 1 is the default VLAN of the switch.

Step 4. In the interface context, acquire an IP address from the DHCP server by entering the following:

```
Switch(config-if)# ip address dhcp
```

Step 5. (Optional) To remove an IP address from an interface, use the no form of the IP address DHCP command by entering the following:

```
Switch(config-if)#no ip address dhcp
```

Step 6. (Optional) To display the IP address configuration and information of the interface, enter the following command in the Privileged EXEC mode:

```
Switch#show ip interface
```

Step 7. (Optional) To display the IP address configuration and information on the DHCP client interface, enter the following command in the Privileged EXEC mode:

```
Switch#show ip dhcp client interface
```

Step 8. (Optional) To save the configured settings to the startup configuration file, enter the following:

```
Switch#copy running-config startup-config
```