Exercise: Configuring a DHCP Server and Clients

Objectives:

In this exercise, you will set up a DHCP server and clients using Cisco Packet Tracer. You will configure a server to assign IP addresses dynamically to PCs and test network connectivity.

Part 1: Building the Network

Step 1: Add Network Devices

1. Open **Cisco Packet Tracer**.
2. Add the following devices from the **Device-Type Selection Box**:
    - **1 Server** → *End Devices* > *Server*
    - **1 Switch** → *Network Devices* > *Switch 2960*
    - **3 PCs** → *End Devices* > *PC*

Step 2: Connect the Devices

1. Use **Copper Straight-Through Cables** (*Connections* > *Copper Straight-Through*).
2. Connect:
    - **Server** (FastEthernet0) → **Switch** (anyFastEthernet)
    - **Each PC** (FastEthernet0) → **Switch** (any FastEthernet)

Part 2: Configuring the DHCP Server

Step 3: Assign a Static IP to the Server

1. Click the **Server**, go to the **Config** tab.
2. Select **FastEthernet0** and configure:
    - **IP Address:** 192.168.1.1
    - **Subnet Mask:** 255.255.255.0

Step 4: Enable and Configure DHCP Service

1. Click the **Server**, go to the **Services** tab.
2. Select **DHCP** and **turn on the service**.
3. Set the following:
    - **Start IP Address:** 192.168.1.10

- **Subnet Mask:** 255.255.255.0
- **Default Gateway:** 192.168.1.1
- **Maximum Number of Users:** 10

4. Click **Save**.

Part 3: Configuring the PCs as DHCP Clients

Step 5: Set DHCP on Each PC

1. Click **PC0**, go to **Desktop > IP Configuration**.
2. Select **DHCP** and check if an **IP address is assigned** (e.g., 192.168.1.10).
3. Repeat for **PC1 and PC2**.

Part 4: Testing Network Connectivity

Step 6: Verify Connectivity with Ping

1. Open **Command Prompt** on **PC0** (Desktop > Command Prompt).
2. Type: ping 192.168.1.11

   (Replace with the IP of another PC or server.)

3. If successful, repeat on **PC1 and PC2** to test all connections.

Part 5: Turn off the DHCP Service

Step 7: Turn off and Configure DHCP Service

1. Click the **Server**, go to the **Services** tab.
2. Select **DHCP** and **turn off the service**.
3. Click **Save**.

Step 8: Observe what IP address is assigned to Each PC

1. Click **PC0**, go to **Desktop > IP Configuration**.
2. Select **DHCP** and check what **IP address is assigned**
3. Repeat for **PC1 and PC2**
4. Think about why this IP address is assigned.