**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.)*

1. 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.