

NPS LAB EXPERIMENT-6

Objective: Implement a smart home setup using Cisco Packet Tracer and verify the configuration of smart devices connected via the network.

Steps:

Step 1: Open **Cisco Packet Tracer** and drag and drop the following devices into the workspace:

- **Server**
- **PC**
- **Router**
- **Switch**
- **Fan**
- **Lamp**
- **Garage Door**
- **Speakers**

Connect the devices using automatic cables:

- **PC to Switch** (FastEthernet 0/3)
- **Server to Switch** (FastEthernet 0/1)
- **Switch to Router** (FastEthernet 2/1)
- **Smart devices** (e.g., Fan, Lamp, Garage Door, etc.) will be wirelessly connected to the network via the router.

Step 2: Click on each smart device (for example, the **Smart Bulb**).

- Go to the **Config** tab.
- Under the **Network** settings, select the **Home Gateway** as its network. The **Home Gateway** is typically the wireless connection point for all IoT (Internet of Things) devices.

Step 3: Assign an SSID (e.g., HomeNetwork) to the **Home Gateway**.

- The SSID is the wireless network name that your smart devices will connect to.

Step 4: Each device can receive an IP address either:

- **Dynamically (via DHCP)** from the **Home Gateway**.
 - Ensure the **Home Gateway** is configured to provide DHCP addresses.
- **Manually:** You can assign **static IPs** to each device by navigating to **Config > Wireless** on each smart device and entering the IP address manually.

Step 5: On the **PC**, go to the **IoT Devices** section:

- Create a **username** and **password** to control smart devices.

- This step registers the PC as a controller for the IoT network, allowing you to control the smart devices.

Step 6: Assign an **IP address** to the PC.

- Then, use the same IP address to configure devices like the **Fan** in the remote server section (on the PC). You will also use the **username** and **password** created earlier to link the PC with each smart device.
- Repeat the same process for the other devices (Lamp, Garage, Speakers, etc.).

Step 7: On the **PC**, go to the **Desktop** tab and open the **IoT Monitor**.

- Here, you should see a list of all connected smart devices (Fan, Lamp, Garage, Speakers, etc.).

Step 8: You can now control the devices using the **IoT Monitor**:

- Turn on/off smart lights.
- Lock/unlock the garage door.
- Control the fan speed, etc.

