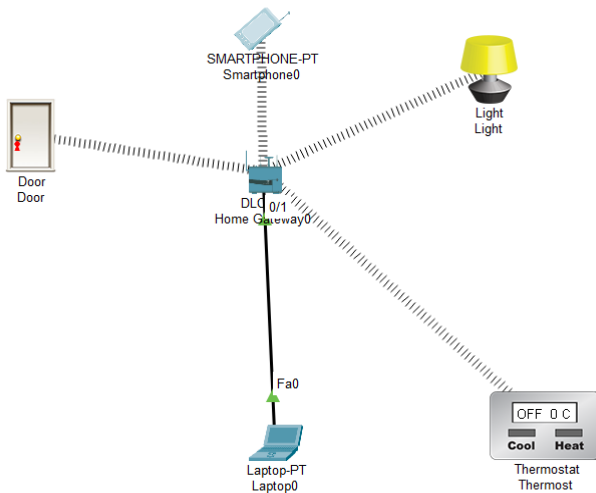


Implementation of Smart home using Cisco packet tracer and verify the configuration



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Set Up the Network Infrastructure

- **Add a Home Gateway**

- Go to "Network Devices" \Rightarrow "Wireless Devices" \Rightarrow "Home Gateway" (DLC100)
- Place it on the workspace.

- **Add a Laptop**

- Go to the "End Devices" section and select a laptop.
- Place it on the workspace.
- In "IP Configuration" Select "DHCP"

- **Connect the Laptop to the Home Gateway:**

- Select the "Connections" tab and choose a straight-through cable.
- Connect the laptop to one of the Ethernet ports on the Home Gateway



Add IOT Devices and Configure the Home Gateway

- **Add Smart Devices:**

- Go to the "Home" section under "End Devices."
- Add various smart devices like a smart light, smart thermostat, smart door lock to the workspace.

- **Add Smartphone**

- Select Smartphone under "End Devices."

- **Configure Home Gateway:**

- Click on the Home Gateway.
- Go to the "Config" tab \Rightarrow "Wireless" setting.
- Set up the SSID (e.g., "YourName") and configure security settings (e.g., WPA2-PSK, "YourPassword").



Configuring the Gateway

Home Gateway0

Physical **Config** GUI Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

Internet

LAN

Wireless

Wireless Settings

SSID: OMPG

2.4 GHz Channel: 6 - 2.437GHz

Coverage Range (meters): 250.00

Authentication

☐ Disabled ☐ WEP ☒ WPA2-PSK ☐ WPA2

WEP Key:

PSK Pass Phrase: 1234ompg

RADIUS Server Settings

IP Address:

Shared Secret:

Encryption Type: AES



Enter SSID and Password to configure Light

Light

Specifications Physical Config Attributes

GLOBAL

Settings

Algorithm Settings

Files

INTERFACE

Wireless0

Bluetooth

Wireless0

Port Status ☒ On

Bandwidth 11 Mbps

MAC Address 0060.47D9.4B82

SSID OMPG

Authentication

☐ Disabled

☐ WPA-PSK

☐ WPA

☐ 802.1X

☒ WPA2-PSK

☐ WPA2

Method:

WEK Key

PSK Pass Phrase 1234ompg

User ID

Password

MD5

User Name

Password

Encryption Type AES



Enter SSID and Password to configure Door

Door

Specifications Physical **Config** Attributes

GLOBAL

- Settings
- Algorithm Settings
- Files

INTERFACE

- Wireless0**
- Bluetooth

Wireless0

Port Status ☒ On

Bandwidth 300 Mbps

MAC Address 0090.0C2E.1A85

SSID OMPG

Authentication

☐ Disabled ☐ WEP ☒ WPA2-PSK ☐ WPA ☐ 802.1X

Method: ☐ WPA2

WEP Key

PSK Pass Phrase 1234ompg

User ID

Password

Method MD5

User Name



Enter SSID and Password to configure Thermostat

Thermost

Specifications Physical **Config** Attributes

GLOBAL

- Settings
- Algorithm Settings
- Files

INTERFACE

- Wireless0**
- Bluetooth

Wireless0

Port Status ☒ On

Bandwidth 11 Mbps

MAC Address 00E0.B02B.5080

SSID OMPG

Authentication

☐ Disabled ☐ WEP ☒ WPA2-PSK ☐ WPA ☐ 802.1X

Method: ☐ WPA2

Encryption Type

WEP Key

PSK Pass Phrase 1234ompg

User ID

Password MD5

User Name

Password

AES



Enter SSID and Password to configure Smartphone

Smartphone0

Physical Config Desktop Programming Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

Wireless0

3G/4G Cell1

Bluetooth

Wireless0

Port Status ☒ On

Bandwidth 300 Mbps

MAC Address 000B.BE91.A02E

SSID OMPG

Authentication

☐ Disabled ☐ WEP ☒ WPA2-PSK ☐ WPA ☐ 802.1X

Method: ☐ WPA2

WEP Key

PSK Pass Phrase 1234ompg

User ID

Password MD5

User Name

Password

Encryption Type AES



Selecting IoT Server as Home Gateway

The screenshot shows a window titled "Thermost" with three tabs: "Specifications", "Physical", and "Config". The "Config" tab is selected and underlined in red. On the left side of the "Config" tab, there is a sidebar menu with the following items: "GLOBAL" (expanded), "Settings", "Algorithm Settings", "Files", "INTERFACE", "Wireless0", and "Bluetooth". Under "INTERFACE", "Wireless0" is selected. The main area of the "Config" tab is titled "Global Settings" and contains the following fields and options:

- Display Name:
- Serial Number:
- Interfaces:
- Gateway/DNS IPv4:
 - ☒ DHCP
 - ☐ Static
 - Default Gateway:
 - DNS Server:
- Gateway/DNS IPv6:
 - ☒ Automatic
 - ☐ Static
 - Default Gateway:
 - DNS Server:
- IoT Server:
 - ☐ None
 - ☒ Home Gateway
 - ☐ Remote Server

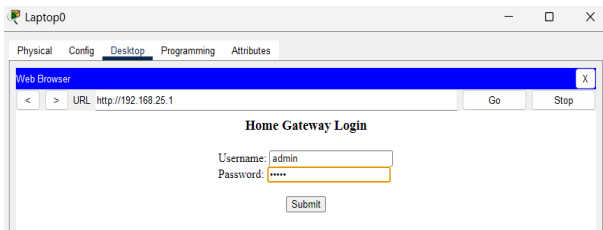
Repeat this step for every smart device (Door, Thermostat, Light)



Control Devices

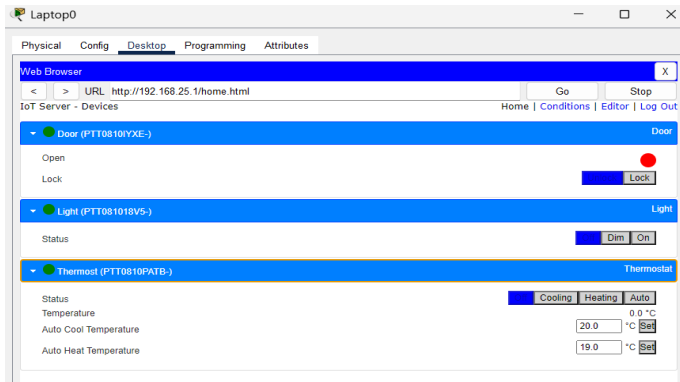
- **Use the Laptop to Control IoT Devices:**

- Open the web browser on the laptop.
 - Enter the IP address of the Home Gateway (192.168.25.1) to access the control interface.
 - username: admin password: admin
 - Use the control interface to turn on/off devices, adjust settings





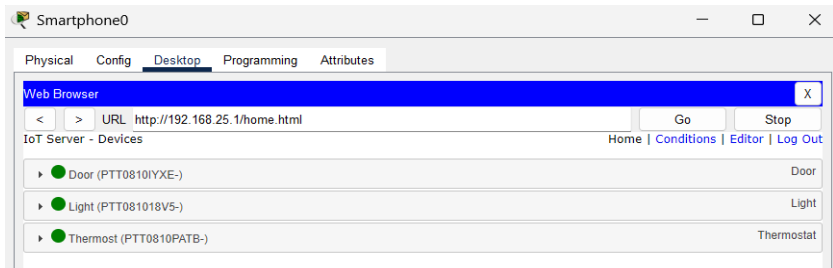
Control Interface on Laptop Browser(1)



Note: If the devices are not visible on the browser, SwitchOFF and SwitchON the devices



Control Interface on Smartphone Browser(2)





Control Interface on IOT Monitor(3)

Smartphone0

Physical Config Desktop Programming Attributes

IoT Monitor X

IoT Server Address:

User Name:

Password:

Login



Conclusion

This setup allows you to simulate a smart home environment in Cisco Packet Tracer. By adding and configuring various IoT devices, you can create a realistic smart home network where devices are interconnected and controllable via a central hub.