**SMART HOME USING IOT**

I have made a smart home model using IoT in Cisco packet tracer.

Here are the steps to configure the model

1. Drag and drop all the required components like a router, servers (DNS, IoE, CO), a switch to link servers and router, cloud component, a cell tower, a modem, a default home gateway to connect all smart devices and two terminals (end devices).
2. Connect components

2.1 Cell tower with the CO server.

2.2 CO server with the router.

2.3 Router with switch and cloud.

2.4 Switch with the DNS and IoE servers.

2.5 Cloud component with the modem.

2.6 Modem with the default home gateway.

2.7 All smart devices with home gateway using wireless connections (smart device > advanced > I/O > Network adapter set to wireless > Config > Wireless > IP Configuration > DHCP). You can add authentication too.

1. Configure the router

3.1 Provide IP for every connection.

3.2 Configure DNS and IoE servers (provide IPs, Gateways and enable DNS and IoT services).

3.2 Implement DHCP

---FOR CO SERVER SIDE---

enable

Config t

(config)# ip dhcp pool ---Name---

(config)# network ---IP--- ---Subnet mask----

(config)# default-router ---Router Gateway---

(config)# dns-server ---DNS IP---

REPEAT THE SAME FOR THE OTHER SIDE (CLOUD and MODEM).

3.3 Link and configure the connections.

1. Smart Devices > Config > IoT Server > Set Remote Server > Provide the IoE Server IP > Give Username and Password. Configure the same for all smart devices.
2. Try to ping from the laptop from the home to the IoE server and DNS server. If the ping is successful, proceed to the next step.
3. Connect every smart device (Smart Device > Config > IoT Server > Connect).
4. Access laptop in home > Desktop > IoT Monitor > Provide the IP of IoE Server > Enter the Credentials > Login.

7.1 If Wrong Username or Password > Click on Sign Up Now >

Enter the credentials > Create.

1. Connect the devices again. Now you will see the devices in the IoT Monitor.
2. You can now access all smart devices.
3. If you want to access the devices from a web browser then, DNS Server > Services > DNS > Give a name like iot.com > Provide the IP of IoE server > Add > Save. Now, you can access your devices from the browser.
4. You can also automate your devices with the help of conditions from the IoT Server page.
5. Here is an example, I want the sprinklers to work when the water level is 0. You can do this by creating a condition. You name the condition. Then you describe the condition. If the Water Level Monitor device shows water level = 0 then Sprinkler status to True. To stop watering if the Water Level Monitor device shows water level = ---Some Number--- then Sprinkler status to False.
6. These steps should give you a working smart home.

Refer my .pkt file for more info.

**HOW IS SECURITY?**

Anyone can signup with their credentials and can access all smart devices in the home and there are no firewalls.

**HOW CAN IT BE IMPROVED?**

It can be improved by adding security by making users access only their smart devices and not all the devices. This can be done by adding more houses and limiting a user to his devices.

**WHERE IS THE DATA FROM THE SMART DEVICES STORED?**

The data is stored in the cloud.