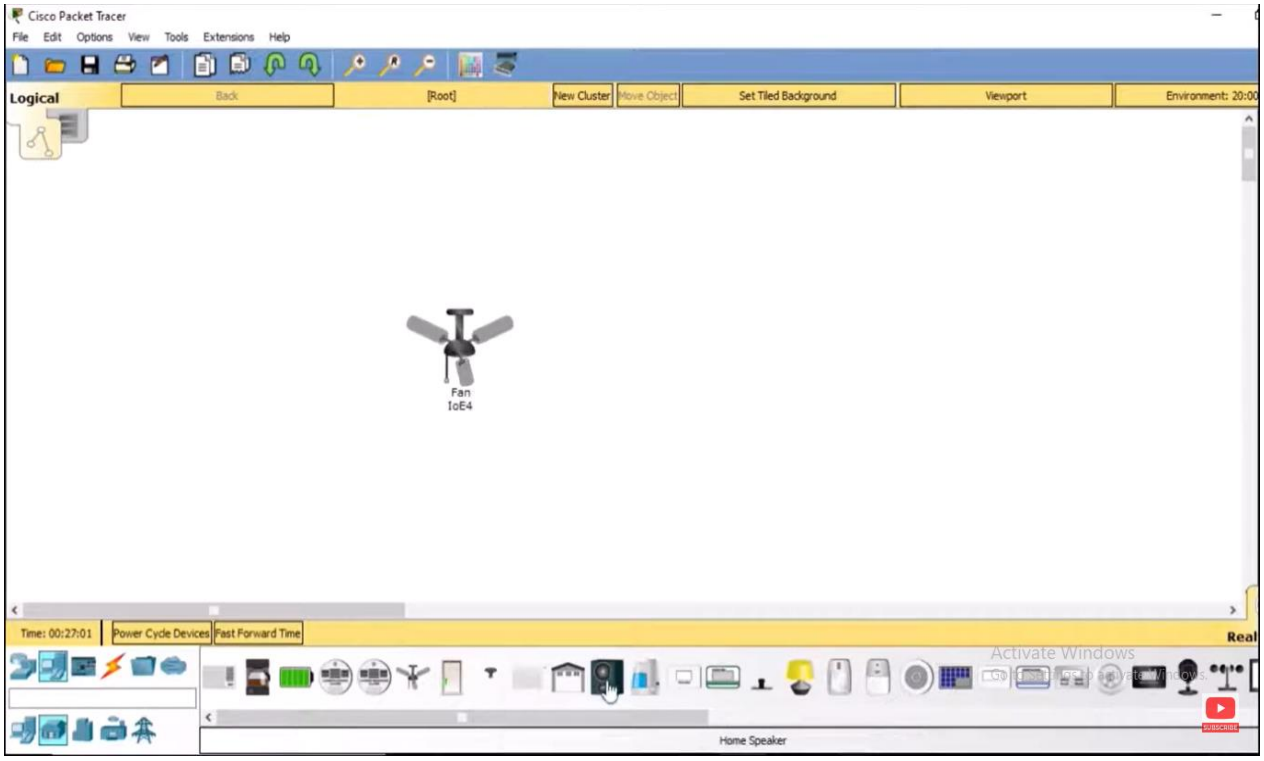
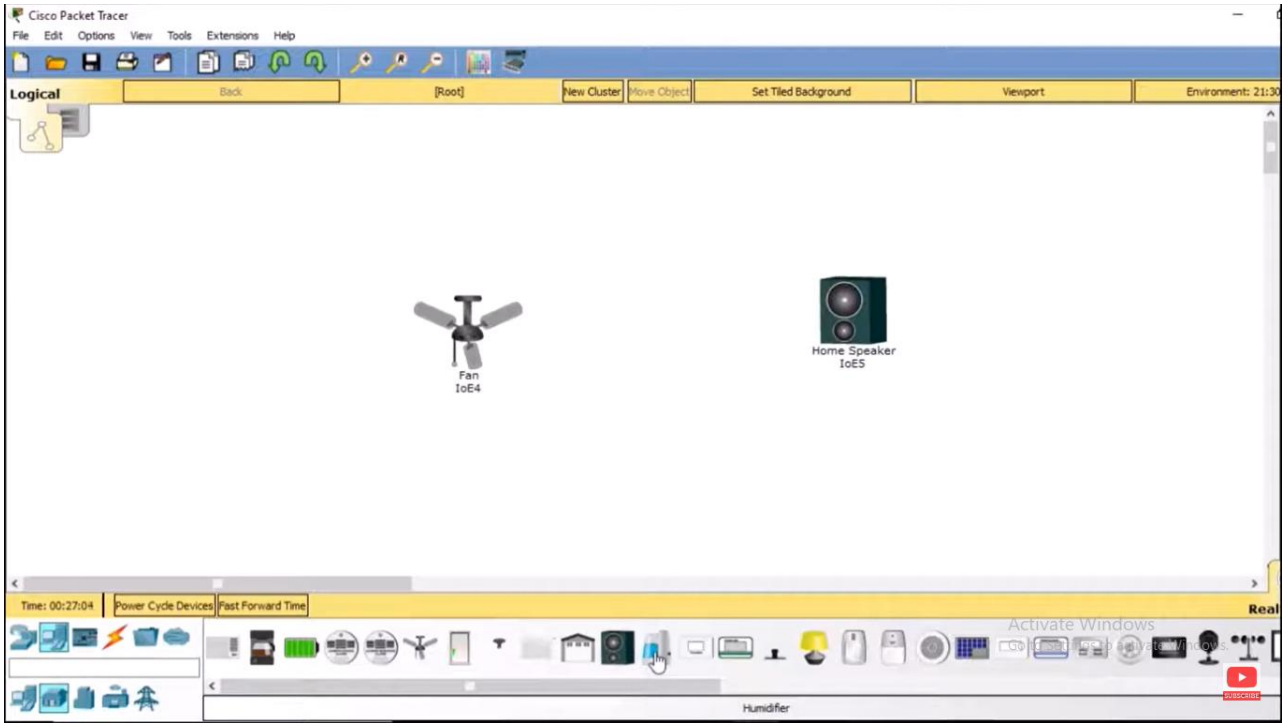
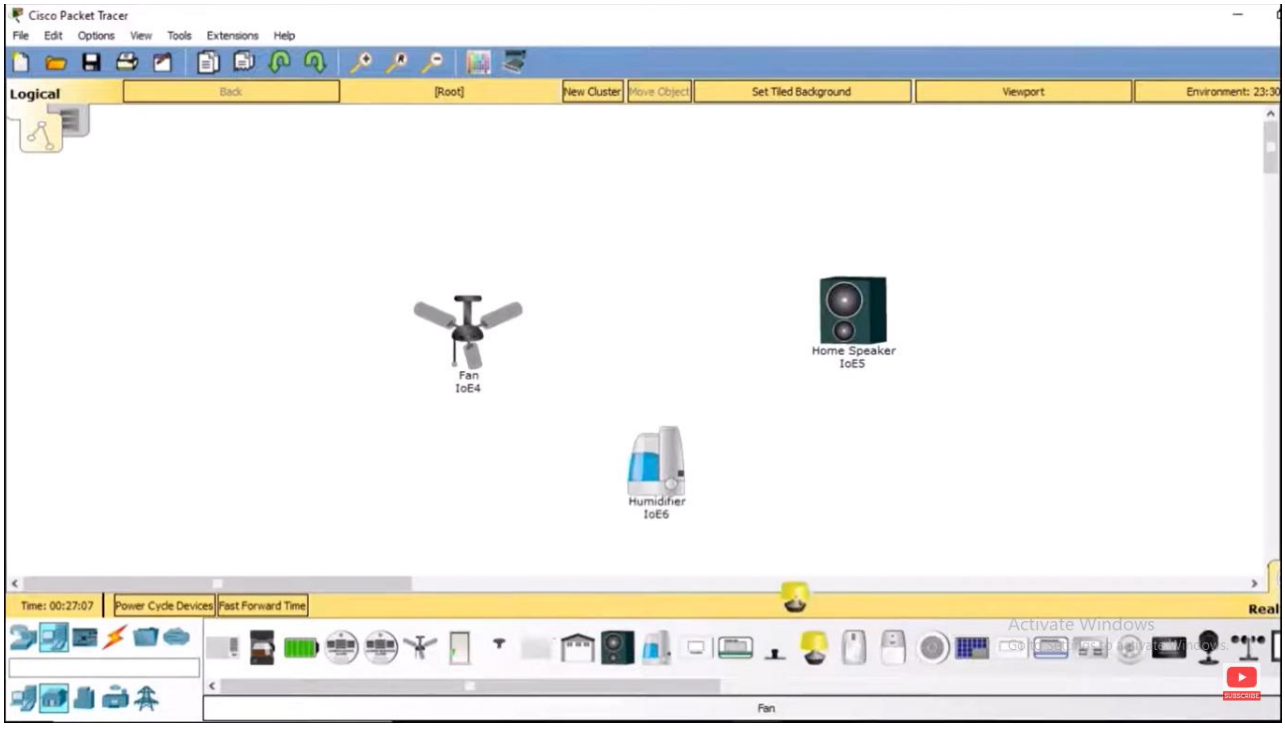
CHAPTER 5

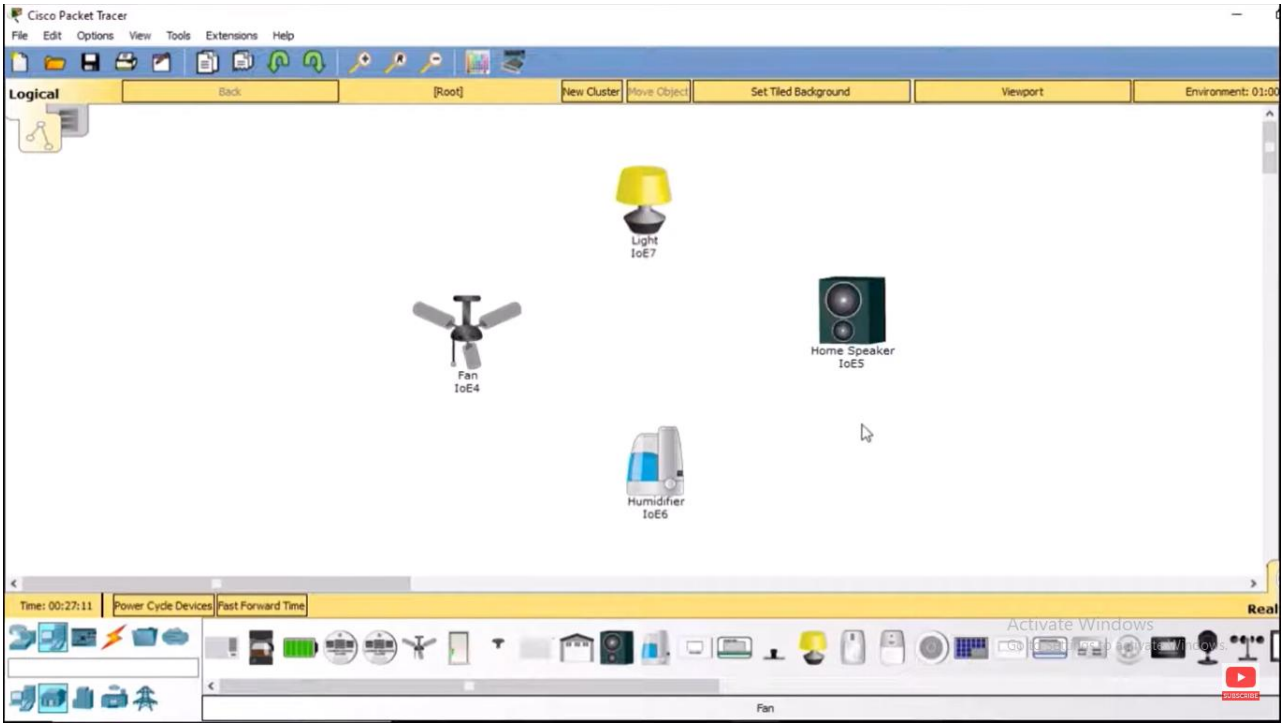
IMPLEMENTATION

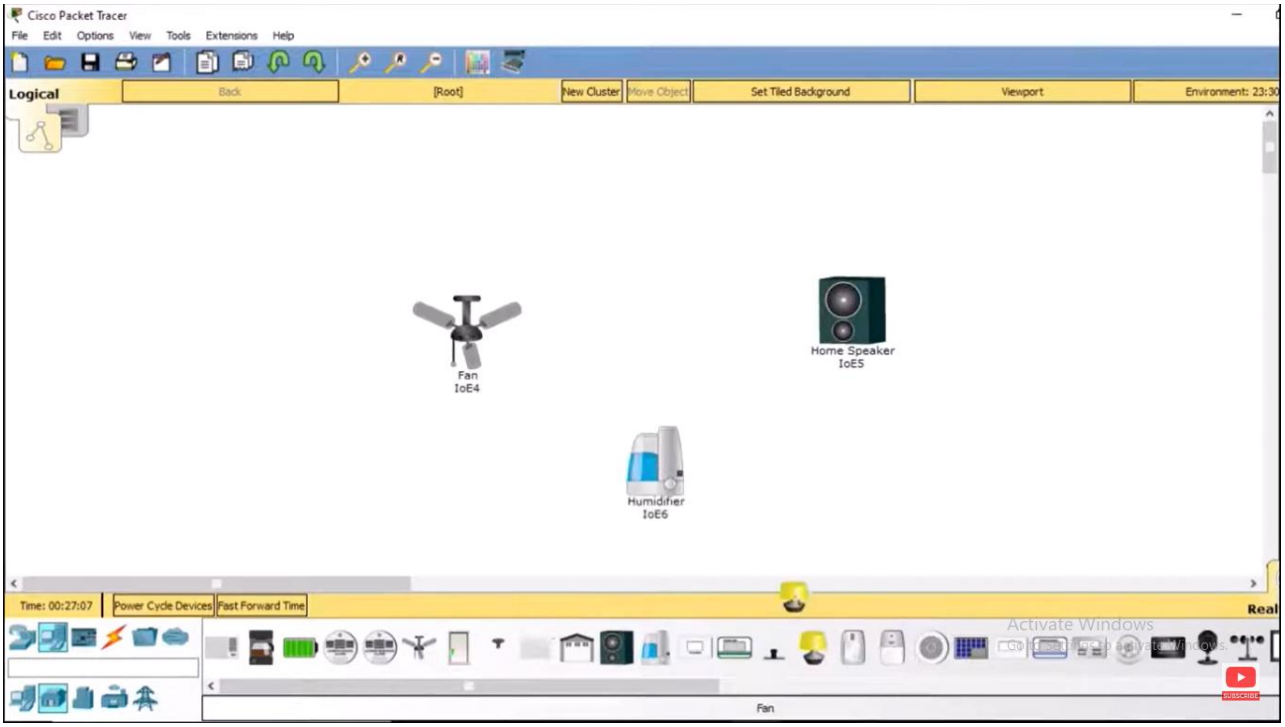
Including various smart objects which are used for implementing home automation such as windows, fans, lights, doors, lawn sprinklers, webcams and various sensors. The router and server are used for controlling the objects and sensors, which provide a programming environment for controlling objects that are connected and provide control mechanisms through the registration of Home Gateway smart devices.

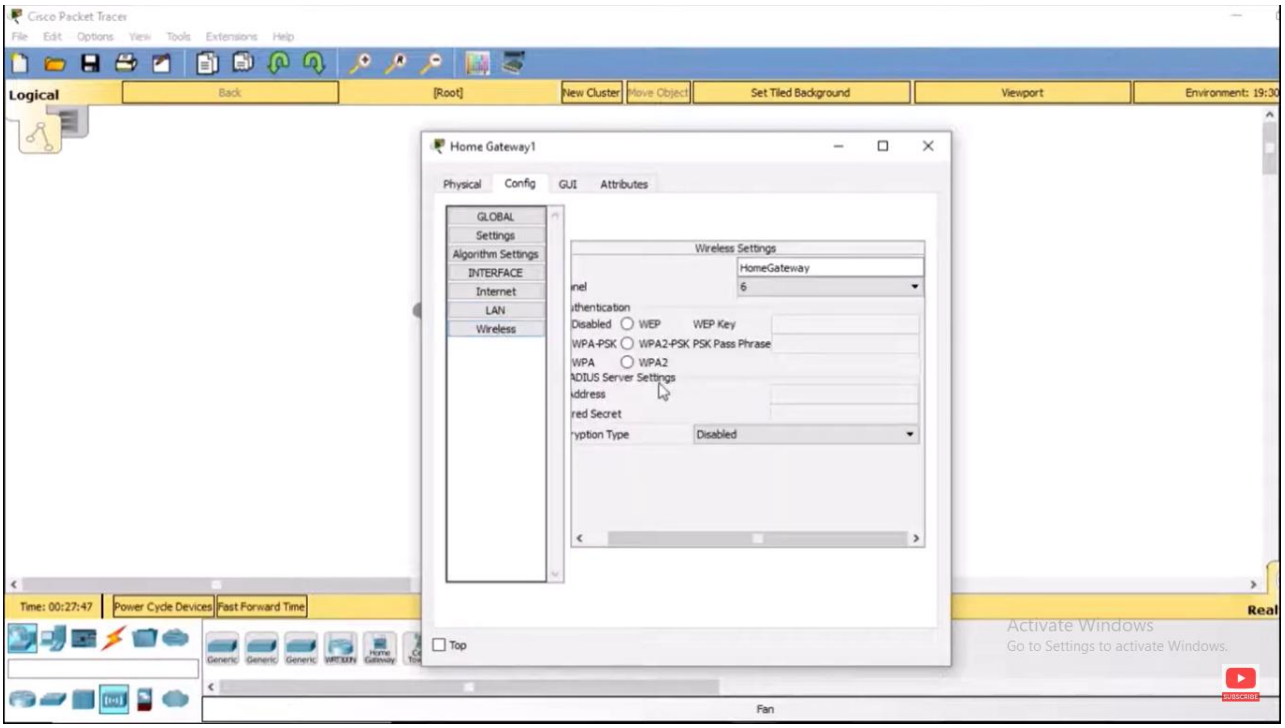


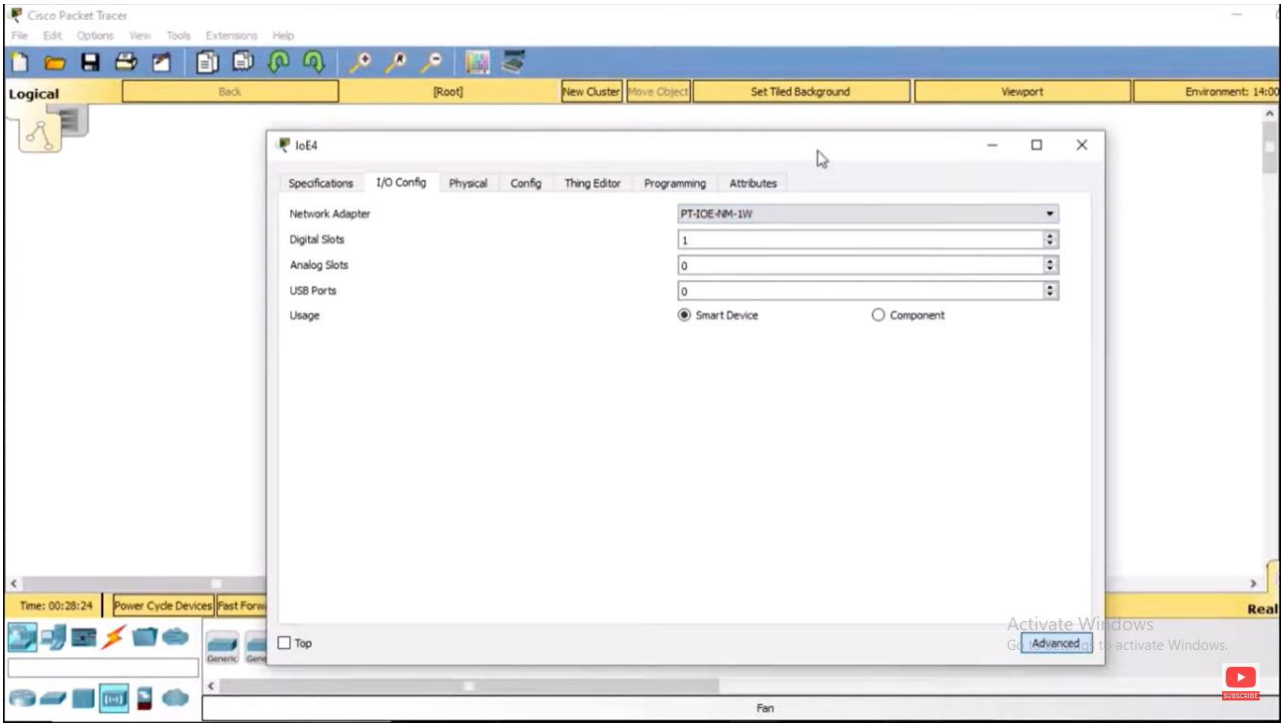

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Back
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Environment: 21:30
Fan
IoE4
Home Speaker
IoE5
Time: 00:27:04
Power Cycle Devices
Fast Forward Time
Real
Humidifier

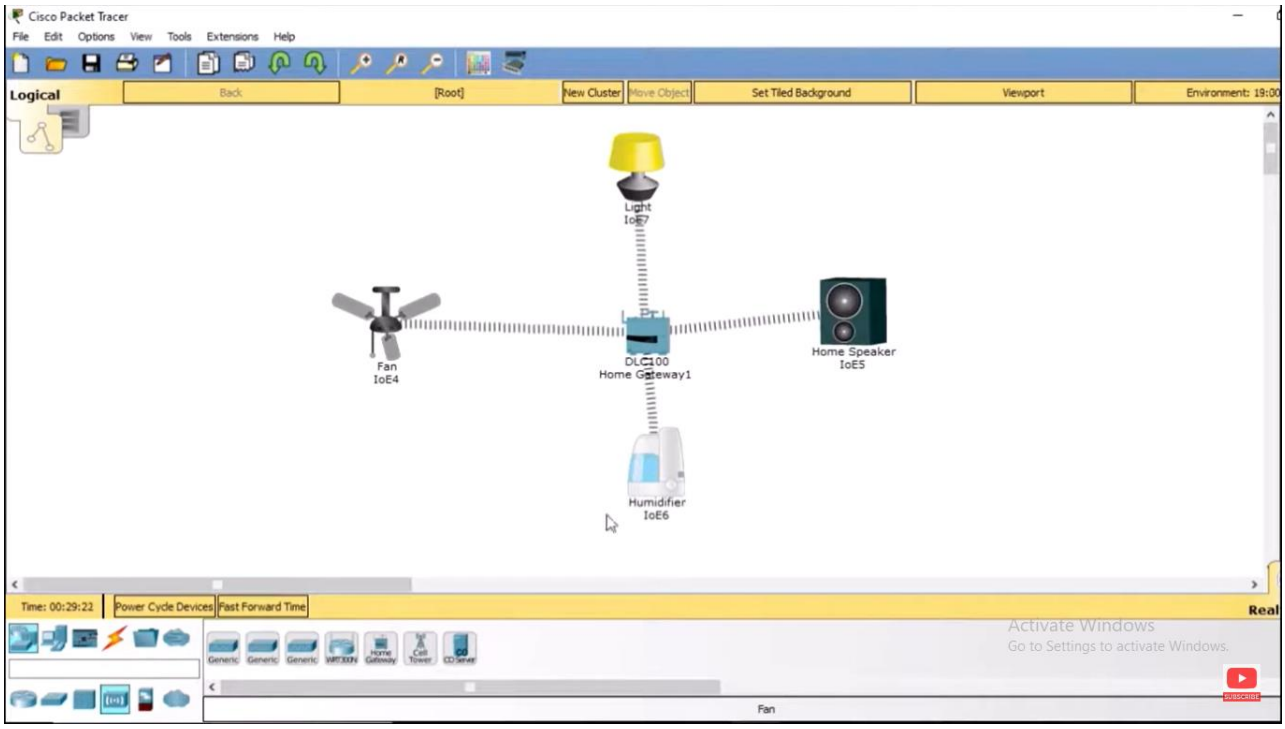

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Back
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Environment: 23:30
Fan
IoE4
Home Speaker
IoE5
Humidifier
IoE6
Time: 00:27:07
Power Cycle Devices
Fast Forward Time
Real
Fan

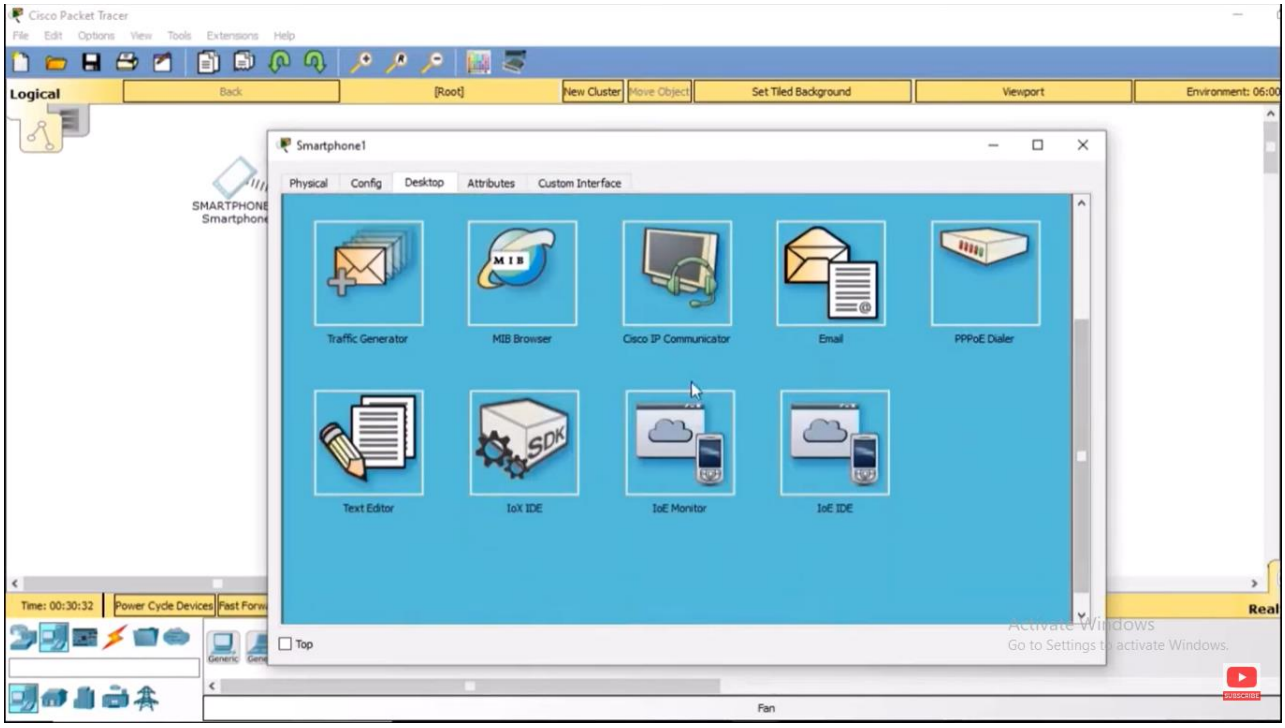

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Back
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Environment: 01:00
Light
IoE7
Fan
IoE4
Home Speaker
IoE5
Humidifier
IoE6
Time: 00:27:11
Power Cycle Devices
Fast Forward Time
Real
Activate Windows
Fan

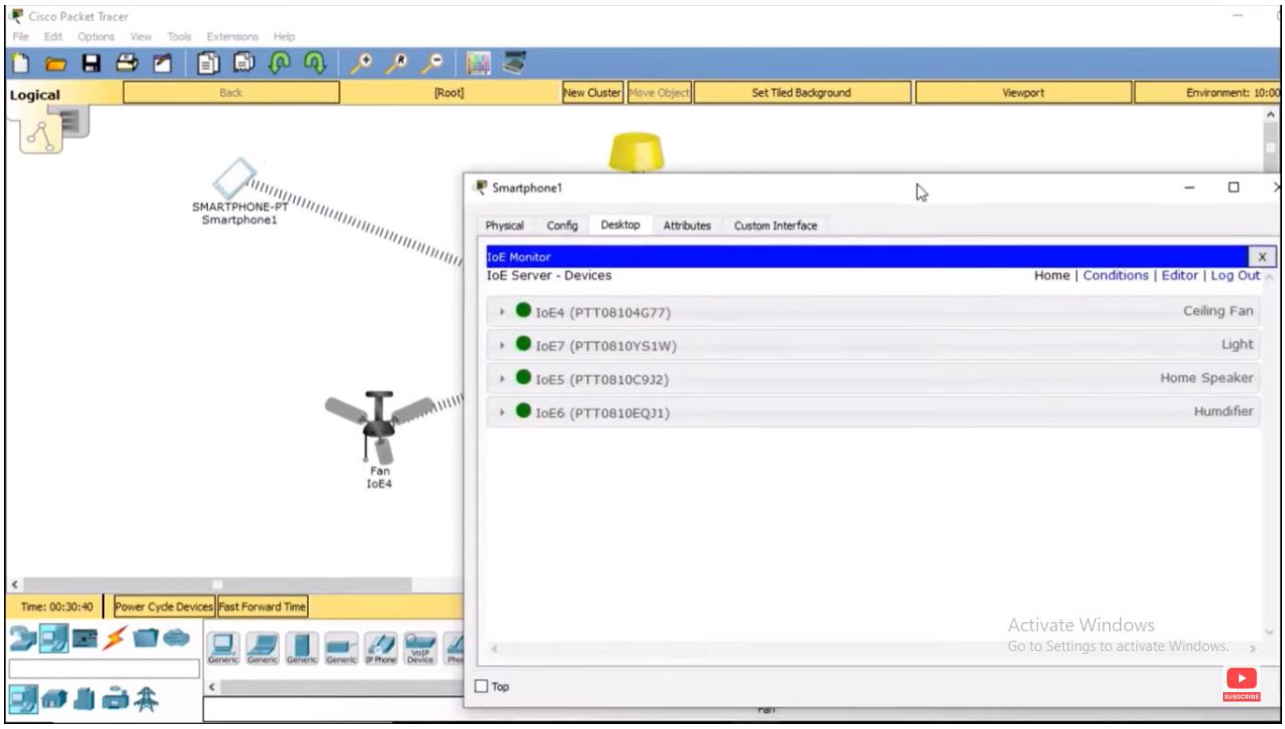

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Back
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Environment: 23:30
Fan
IoE4
Home Speaker
IoE5
Humidifier
IoE6
Time: 00:27:07
Power Cycle Devices
Fast Forward Time
Real
Activate Windows
Fan

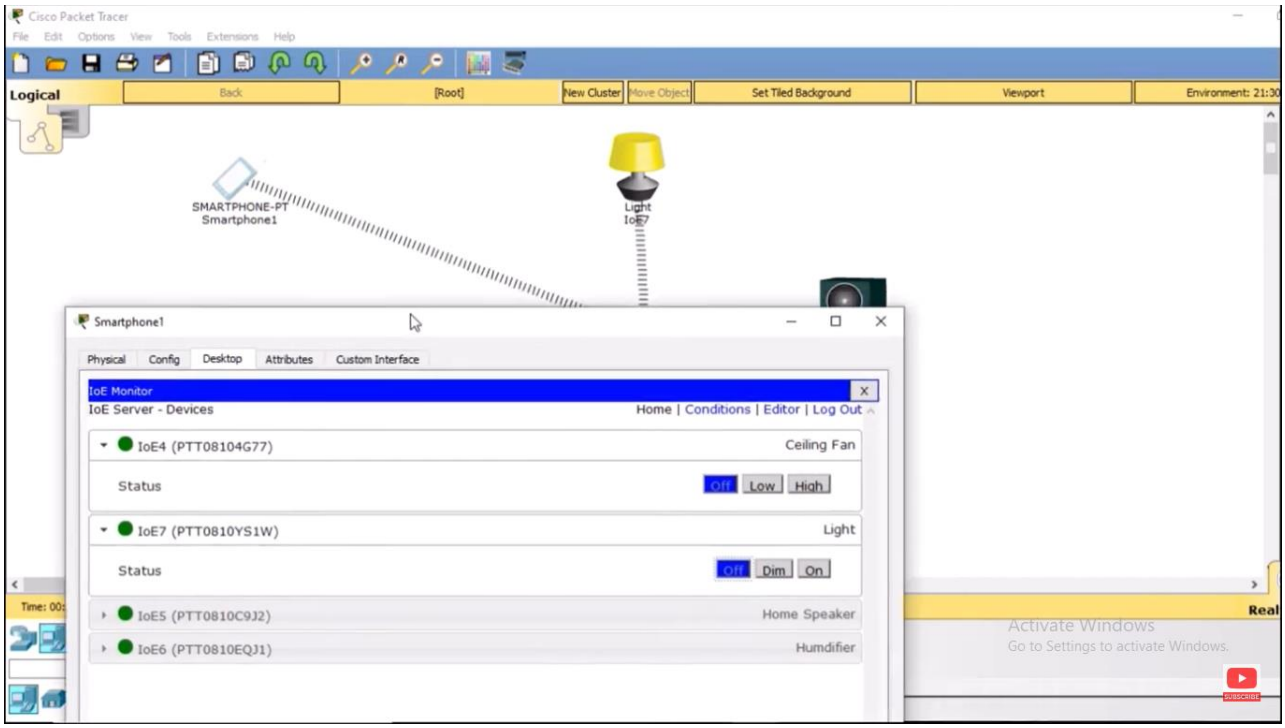

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Back
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Environment: 19:30
Home Gateway1
Physical
Config
GUI
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
Internet
LAN
Wireless
Wireless Settings
HomeGateway
6
Disabled
WEP
WEP Key
WPA-PSK
WPA2-PSK
PSK Pass Phrase
WPA
WPA2
Disabled
Top
Time: 00:27:47
Power Cycle Devices
Fast Forward Time
Fan
Activate Windows
Go to Settings to activate Windows.


Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Back
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Environment: 14:00
IoE4
Specifications
I/O Config
Physical
Config
Thing Editor
Programming
Attributes
Network Adapter
PT-IOE-NM-1W
Digital Slots
1
Analog Slots
0
USB Ports
0
Usage
Smart Device
Component
Top
Advanced
Time: 00:28:24
Power Cycle Devices
Fan
Activate Windows


Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Back
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Environment: 19:00
Light
IoE7
Fan
IoE4
DLC100
Home Gateway1
Home Speaker
IoE5
Humidifier
IoE6
Time: 00:29:22
Power Cycle Devices
Fast Forward Time
Activate Windows
Go to Settings to activate Windows.
Fan

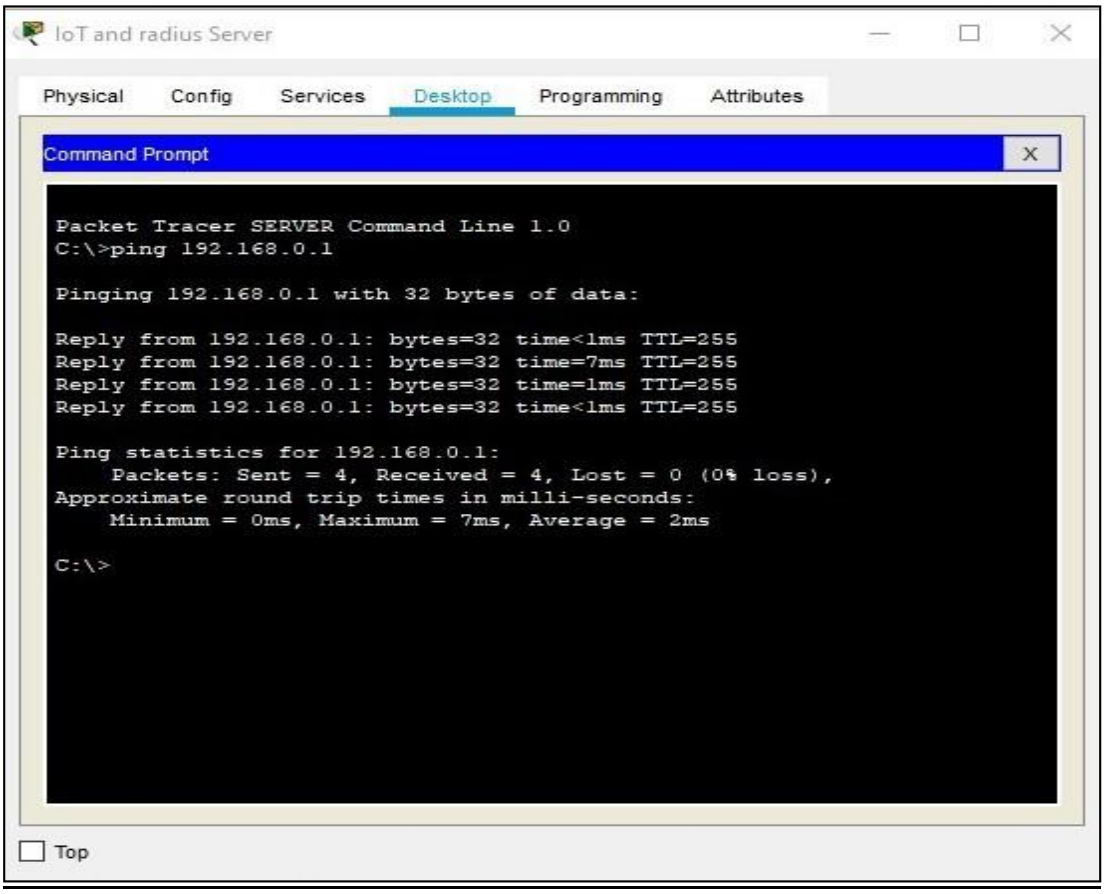

Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Back
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Environment: 06:00
Smartphone1
Physical
Config
Desktop
Attributes
Custom Interface
Traffic Generator
MIB Browser
Cisco IP Communicator
Email
PPPoE Dialer
Text Editor
IoX IDE
IoE Monitor
IoE IDE
Top
Time: 00:30:32
Activate Windows
Go to Settings to activate Windows.
Fan


Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Back
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Environment: 10:00
SMARTPHONE-PT
Smartphone1
Fan
IoE4
Time: 00:30:40
Power Cycle Devices
Fast Forward Time
Smartphone1
Physical
Config
Desktop
Attributes
Custom Interface
IoE Monitor
IoE Server - Devices
Home | Conditions | Editor | Log Out
IoE4 (PTT08104G77)
Ceiling Fan
IoE7 (PTT0810YS1W)
Light
IoE5 (PTT0810C9J2)
Home Speaker
IoE6 (PTT0810EQJ1)
Humdifier
Top
Activate Windows
Go to Settings to activate Windows.


Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Back
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Environment: 21:30
SMARTPHONE-PT
Smartphone1
Light
IoE7
Smartphone1
Physical
Config
Desktop
Attributes
Custom Interface
IoE Monitor
IoE Server - Devices
Home | Conditions | Editor | Log Out
IoE4 (PTT08104G77)
Ceiling Fan
Status
Off
Low
High
IoE7 (PTT0810YS1W)
Light
Status
Off
Dim
On
IoE5 (PTT0810C9J2)
Home Speaker
IoE6 (PTT0810EQJ1)
Humdifier
Activate Windows
Go to Settings to activate Windows.

ROUTER(WRT300N)

The router is set up with an IP address and default gateway. Then we change the network SSID name to “Home” . In the wireless security section the network mode is selected to WPA2 Enterprise. Then the encryption is selected which we set to AES here. We set the radius server option here to what we registered our server with. Here we also provide the shared password for the router. The figure below show the different configurations of the router. The router is connected to switch and different devices and the server.



REGISTERING TO THE SERVER

We connect a laptop to the router by setting up the IP configurations and then register to the server by providing a username and a password. After registering we can login with same credentials to viewthe devices which have been connected to our network and access them.

SETTING UP DEVICES

For every device the network adapter is set to PT-IOT-NM-1W-AC.After that IoT server is selected as remote server and we provide the IP address of the router along with the password that we registered on the server with. In the wireless configuration part we provide the SSID along with authenencrypttype and username, password of the device with which it has been Registered on server