

EXPERIMENT 15

CONFIGURATION OF DHCP (DYNAMIC HOST
CONFIGURATION PROTOCOL) IN PACKET CRACKER

Aim:

To configure DHCP Dynamic Host Configuration
Protocol in packet cracker.

Software / Apparatus required: packet cracker |

End devices, hubs, concentrators.

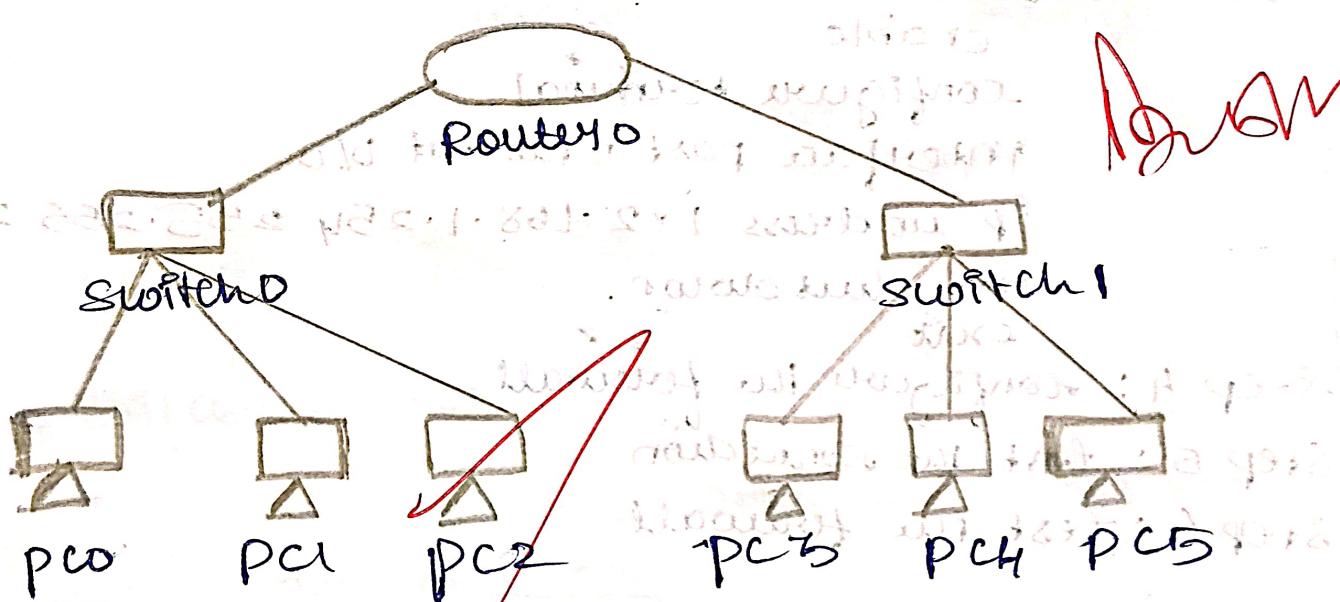
Algorithm:

- 1, Start
- 2, configure the DHCP server
- 3, configure the switch that connect to the DHCP clients
- 4, configure the DHCP clients to obtain their IP addresses automatically using DHCP
- 5, client request and server response
- 6, client selection and select
- 7, server acknowledgement
- 8, client configuration
- 9, Lease Renewal and termination
- 10, END

Procedure:

- 1, Launch Cisco packet cracker and create a new network topology or open an existing one.

- 2) Add the necessary network device to your topology & configure it accordingly.
- 3) Configure the DHCP server.
- 4) Configure the switch.
- 5) Configure the DHCP clients
- 6) Start the simulation by clicking on Start button.
- 7) Verify DHCP operation that the clients have the correct IP address, subnet mask, default gateway and DNS server setting.



Result: Therefore the configuration for DHCP has been successfully executed

Experiment - 16

CONFIGURATION OF FIREWALL IN PACKET TRACER

Aim:

To configure the firewall in packet tracer.

Software / Apparatus required : packet tracer, end devices, hubs, connectors.

Procedure:

Step 1: Set up the network topology

Step 2: Configure IP address for PC1, PC2, PC3

Step 3: Configure the router and enter the commands :

enable

configure terminal

interface fast ethernet 0/0

IP address 192.168.1.254 255.255.255.0

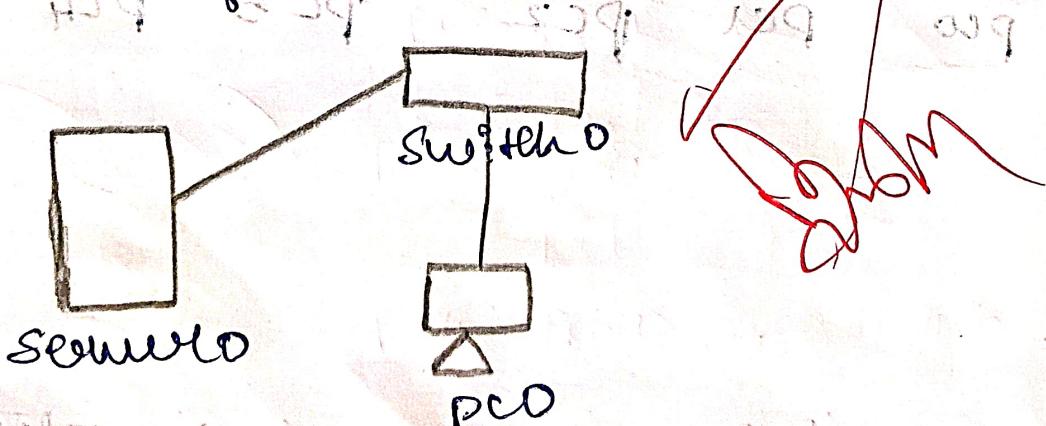
no shutdown

exit

Step 4: Configure the firewall

Step 5: Test the connection

Step 6: Test the firewall



Result: Hence the configuration of firewall in packet tracer is successful.

Experiment-17

MAKE A COMPUTER LAB TO TRANSFER A MESSAGE FROM ONE NODE TO ANOTHER TO DESIGN AND SIMULATE USING CISCO PACKET TRACER

Aim: To make a computer lab to transfer a message from one node to another to design and simulate using Cisco packet tracer.

Software / Apparatus Required:

packet tracer,

End devices, Hubs, connectors.

Procedure:

Step 1: Create the network topology.

The network should look like this :

CODE :

PC1 PC2

Switch --- Router 1 --- Router 2

Step 2: Configure IP addresses. for PC1, PC2 and all the PC with same subnet mask.

Step 3: Configure the routers.

Now double click on Router 1 to open the configuration window and navigate to the CLI tab.

Enter the following commands for Router 1;

enable

configure terminal

interface FastEthernet0/0

ip address 192.168.1.254 255.255.255.0

no shutdown

interface serial 0/0/0

ip address 10.0.0.1 255.255.255.252

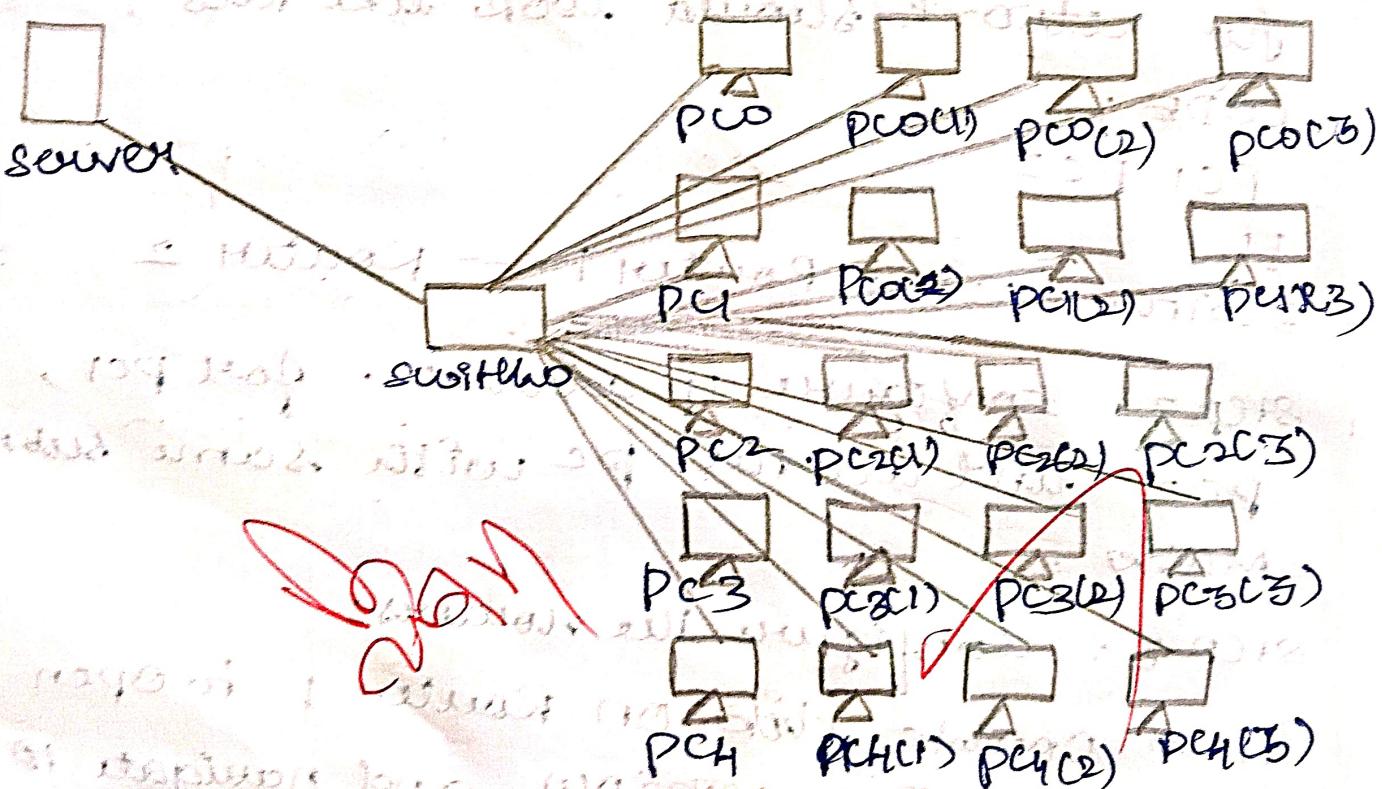
no shutdown

exit

Now, put the command for Router2 as same

Step 4: configure routing

Step 5: send a message



Result: Hence the message is transferred from one node to another to design and simulate using Cisco packet tracer successfully.

JS Jassal
192524046

Experiment - 18

SIMULATE A MULTIMEDIA NETWORK IN CISCO PACKET TRACER

Aim: To simulate a multimedia network in Cisco packet tracer.

Software / Apparatus required: Packet tracer

End devices, Hubs, connectors

Procedure:

Step 1: Launch Cisco packet tracer and create a new project.

Step 2: Select the appropriate network devices for your multimedia network.

Step 3: Design the network topology.

Step 4: Drag and drop the devices onto the workspace area. For example: use Ethernet cables to connect computers and IP phones to the switch.

Step 5: Configure IP addresses on the devices.

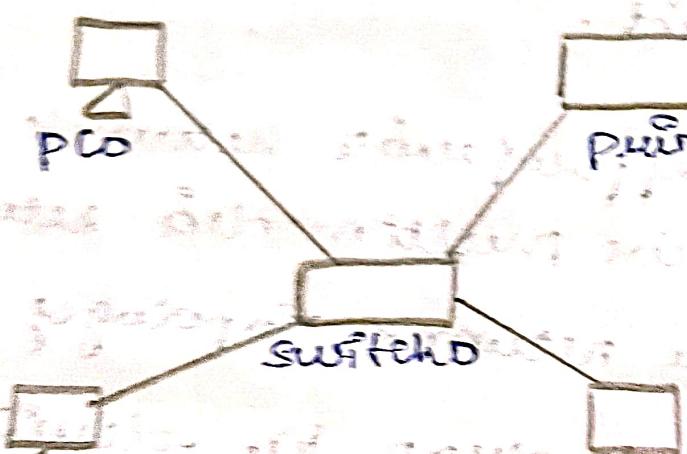
Step 6: Set up multimedia services.

Configure the necessary services for multimedia communication, such as VoIP for phones and streaming protocols for IP cameras.

Step 7: Configure the network for connectivity and multimedia services and verify.

Step 8: Monitor and troubleshoot.

Step 9: Document the lab experiment, Record observations, configurations, and any issues encountered.



Result: Thus the Multimedia Network in Cisco packet tracer is simulated successfully.

Ts Jaafel
192524D46

Experiment - 19

IOT BASED SMART HOME APPLICATIONS

Aim: To implement IoT based smart home applications in Cisco packet tracer.

Software & Apparatus Required:

Cisco packet tracer, End devices, Hubs, connectors.

Procedure:

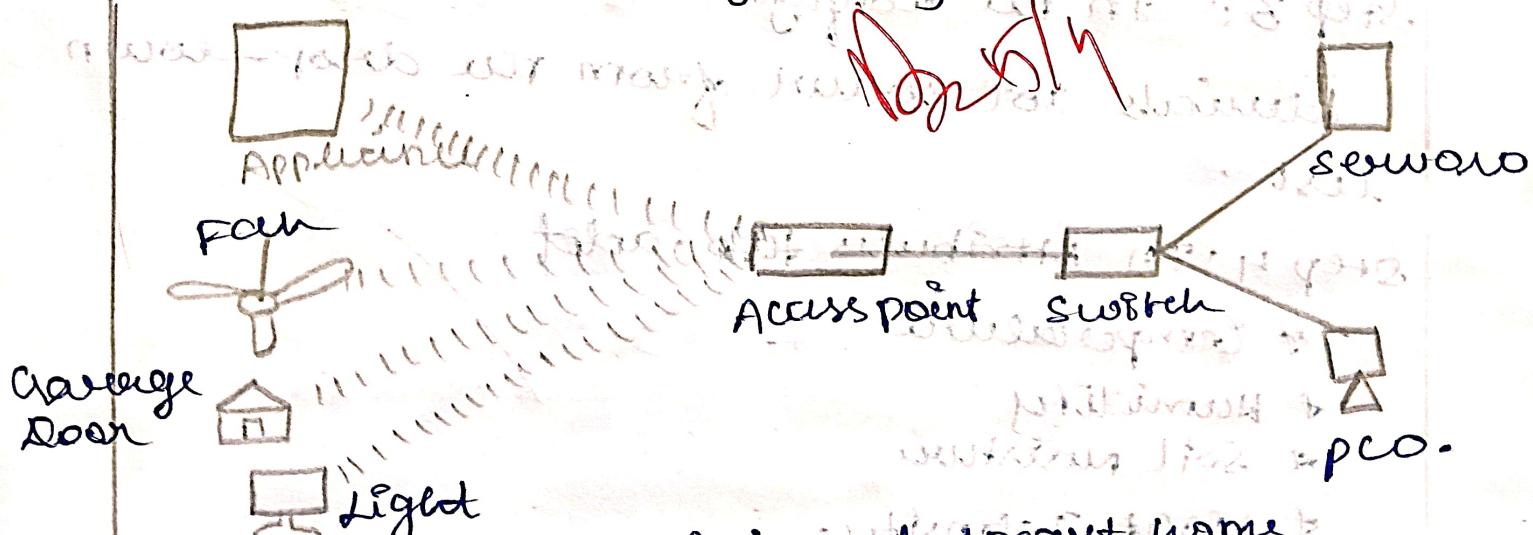
Steps:

1. Create a network topology in Cisco packet tracer that include IoT devices.

2. Configure the IoT devices with appropriate IP addresses, subnets, masks, and gateway addresses.

3. Set up a communication protocol between the IoT using MQTT, CoAP.

4. Write a code to collect data from the sensors and send it to the gateway.



Result: Thus IoT based smart home applications in Cisco packet tracer is implemented successfully.

Experiment - 20IMPLEMENTATION OF IoT-BASED SMART GARDENING

Aim: To implement IoT Based smart gardening using Cisco packet tracer.

Software/Apparatus Required: Cisco packet tracer / End devices, Hubs, connectors.

Procedure:

Step 1: Create a new project in Cisco packet tracer and drag a generic IoT device from the IoT devices section onto the workspace.

Step 2: Right click on the IoT device and select config/Attributes.

Step 3: In the Configuration tab, select the services IoT server from the drop-down list.

Step 4: In Attributes tab, add

* Temperature

* Humidity

* Soil moisture

* Light Intensity

Step 5: Create a soil moisture sensor and a light sensor from the Sensors section of the device panel.

Step 6: Connect the sensors to the IoT device using the wiring tool.

Step 7: Configure the sensors by right-clicking on them and selecting config / Attributes.

Step 8: Create a water pump and a light bulb from the Actuators section of the device panel.

Step 9: Connect the actuators to the IoT device using the wiring tool.

Step 10: Save the configuration and run the simulation.

Step 11: Save the configuration and run the simulation.

~~Step 12: Use the dashboard to control the water pump and light bulb.~~

~~Step 13: Use the dashboard to control the water pump and light bulb.~~

~~Server~~

~~client~~

~~Ed the port of windows for RPA~~



~~Laptop RP.~~

~~measured
per A~~



~~water level monitor~~

~~Lawn speaker~~

Result: Implementation of smart gardening is carried out using IoT successfully.