



Packet Tracer

ACTIVITIES
ASSIGNMENT MODULE 2

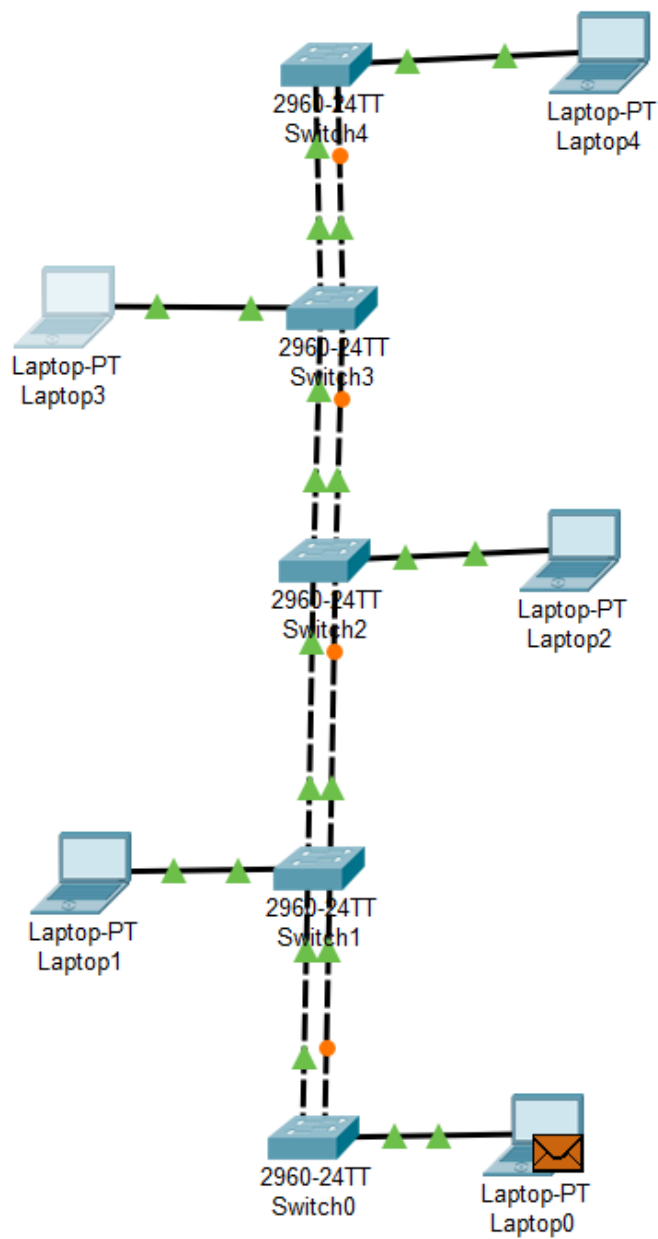
Tavishi Singh
(Roll No 35 (181510035))
Section O
24 March 2020

Activity 1

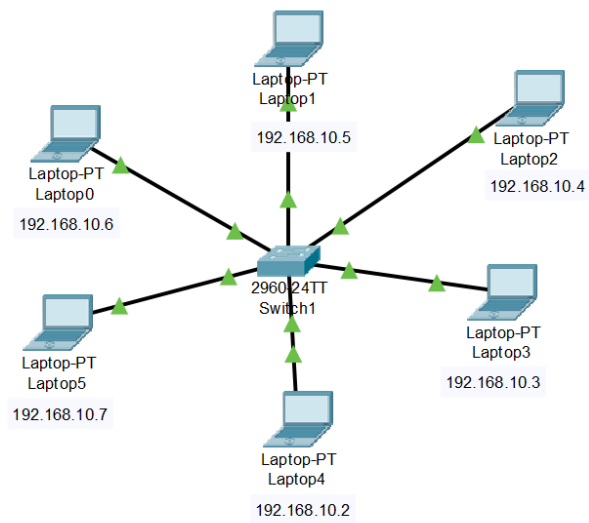
Configure various topologies

BUS

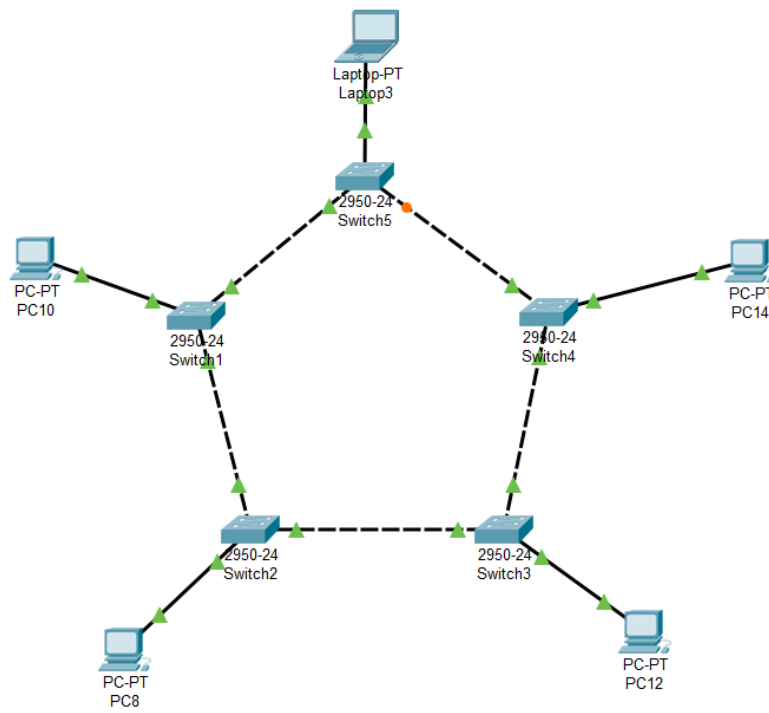
Topology



STAR Topology



RING Topology



Objective

- Make a Bus Topology.
- Make a Ring Topology.
- Make a Star Topology.

Step 1: Set up the network topology

- a. Add many generic PCs.
- b. Connect each PC to switches using ethernet cables as shown.
- c. Connect Switches to Switches wherever required.
- d. Double Click on any Laptop/Desktop, in order to configure the network parameters.
- e. Enter the IP address for each PC:
- f. Go to Desktop Tab
- g. Enter the IP Configurations Setting.
- h. Enter the IP address, Subnet Mask and Default-Gateway.

Step 2: Verify connectivity

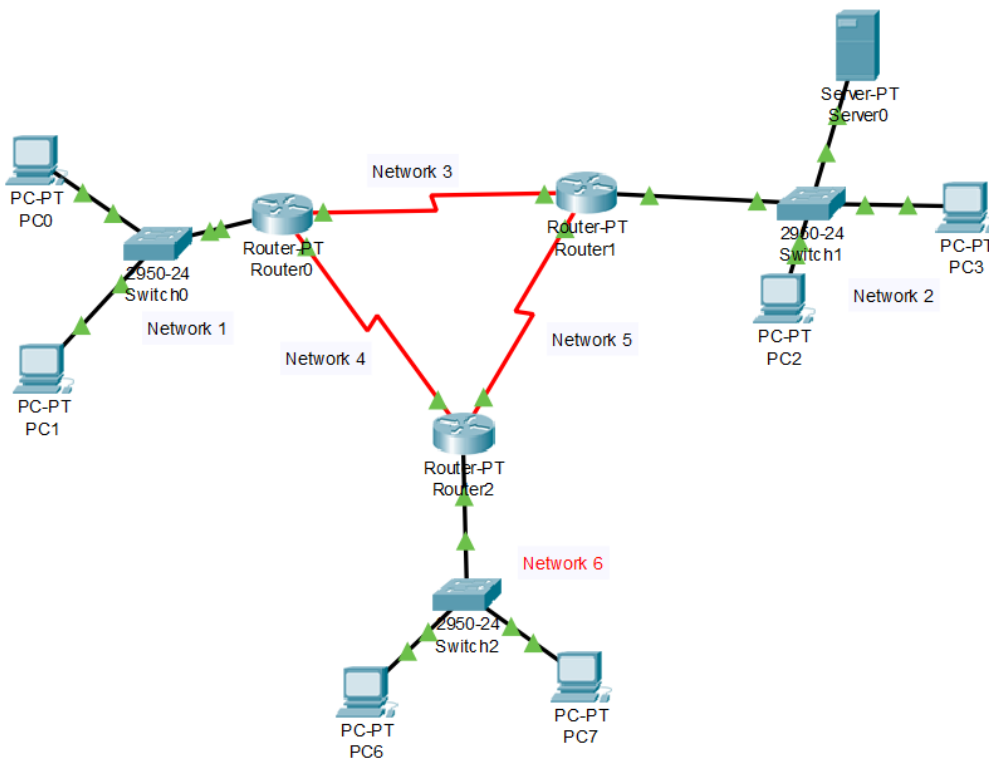
- a. Click **any PC** and select the **Desktop** tab.
- b. Select **Command Prompt**.
- c. Type **ipconfig** at the prompt to view the IP configuration.
- d. Type **ping 192.168.X.X** to ping the from any device to **192.168.X.X**.

The pings to all devices should be successful.

Activity 2

Connecting 3 networks using routers. Also, configure DHCP and DNS server.

Topology

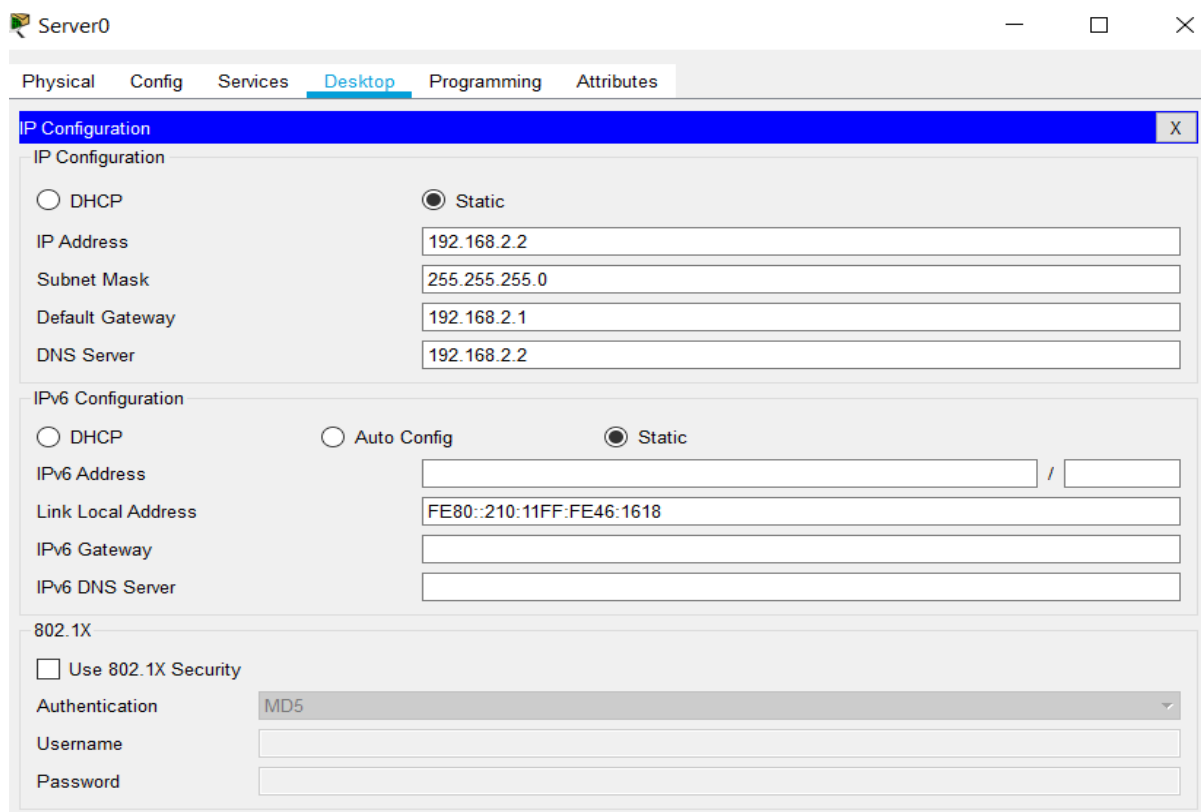


Objective

- Configure 3 routers.
- Configure DHCP.
- Configure DNS.

Steps: Set up the network topology

- Setup the Topology as Shown.
- Configure routers.
- Configure DHCP and DNS Server as:



The screenshot shows the configuration window for 'Server0'. The 'Desktop' tab is selected, and the 'IP Configuration' section is expanded. The 'Static' radio button is selected for IP configuration. The fields are filled with the following values:

Field	Value
IP Address	192.168.2.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.2.1
DNS Server	192.168.2.2

Below the IP configuration, the 'IPv6 Configuration' section is also visible. The 'Static' radio button is selected. The fields are filled with the following values:

Field	Value
IPv6 Address	
Link Local Address	FE80::210:11FF:FE46:1618
IPv6 Gateway	
IPv6 DNS Server	

At the bottom, the '802.1X' section is visible. The 'Use 802.1X Security' checkbox is unchecked. The 'Authentication' dropdown is set to 'MD5'. The 'Username' and 'Password' fields are empty.

Server0

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DHCP

Interface: **FastEthernet0** Service: ☒ On ☐ Off

Pool Name: **serverPool**

Default Gateway: **192.168.2.1**

DNS Server: **192.168.2.2**

Start IP Address: **192** **168** **2** **0**

Subnet Mask: **255** **255** **255** **0**

Maximum Number of Users: **256**

TFTP Server: **0.0.0.0**

WLC Address: **0.0.0.0**

Add **Save** **Remove**

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
Pool1	192.168.1.1	192.168.2.2	192.168.1.0	255.255.2...	255	0.0.0.0	0.0.0.0
Pool6	192.168.6.1	192.168.2.2	192.168.6.0	255.255.2...	255	0.0.0.0	0.0.0.0
serverPool	192.168.2.1	192.168.2.2	192.168.2.0	255.255.2...	256	0.0.0.0	0.0.0.0

d. **Most Important:** Go to each router and run following commands:

```
enable
configure terminal
interface FastEthernet0/0
ip helper-address 192.168.2.2
```

e. Set IP assignment to DHCP for every host.

IPs will be automatically assigned as:

PC2

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface: **FastEthernet0**

☒ DHCP ☐ Static

IP Address: **192.168.2.4**

Subnet Mask: **255.255.255.0**

Default Gateway: **192.168.2.1**

DNS Server: **192.168.2.2**

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address: **FE80::260:47FF:FE39:5694**

Link Local Address: **FE80::260:47FF:FE39:5694**

IPv6 Gateway:

IPv6 DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: **MD5**

Username:

Password:

PC0

Physical Config **Desktop** Programming Attributes

IP Configuration

Interface: **FastEthernet0**

☒ DHCP ☐ Static

IP Address: **192.168.1.3**

Subnet Mask: **255.255.255.0**

Default Gateway: **192.168.1.1**

DNS Server: **192.168.2.2**

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address:

Link Local Address: **FE80::202:4AFF:FE93:1347**

IPv6 Gateway:

IPv6 DNS Server:

802.1X

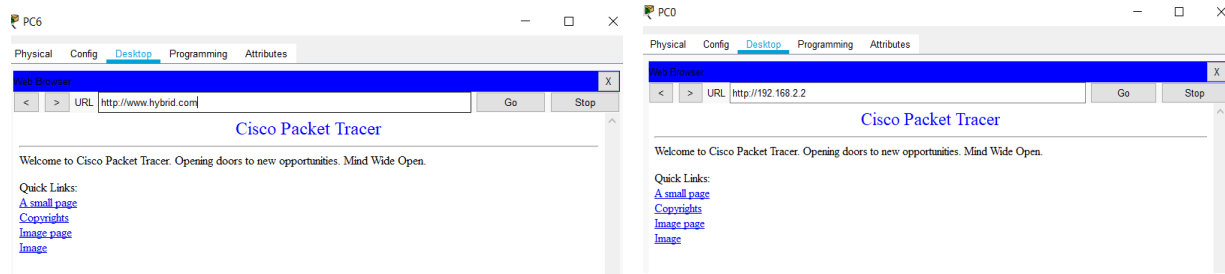
☐ Use 802.1X Security

Authentication: **MD5**

Username:

Password:

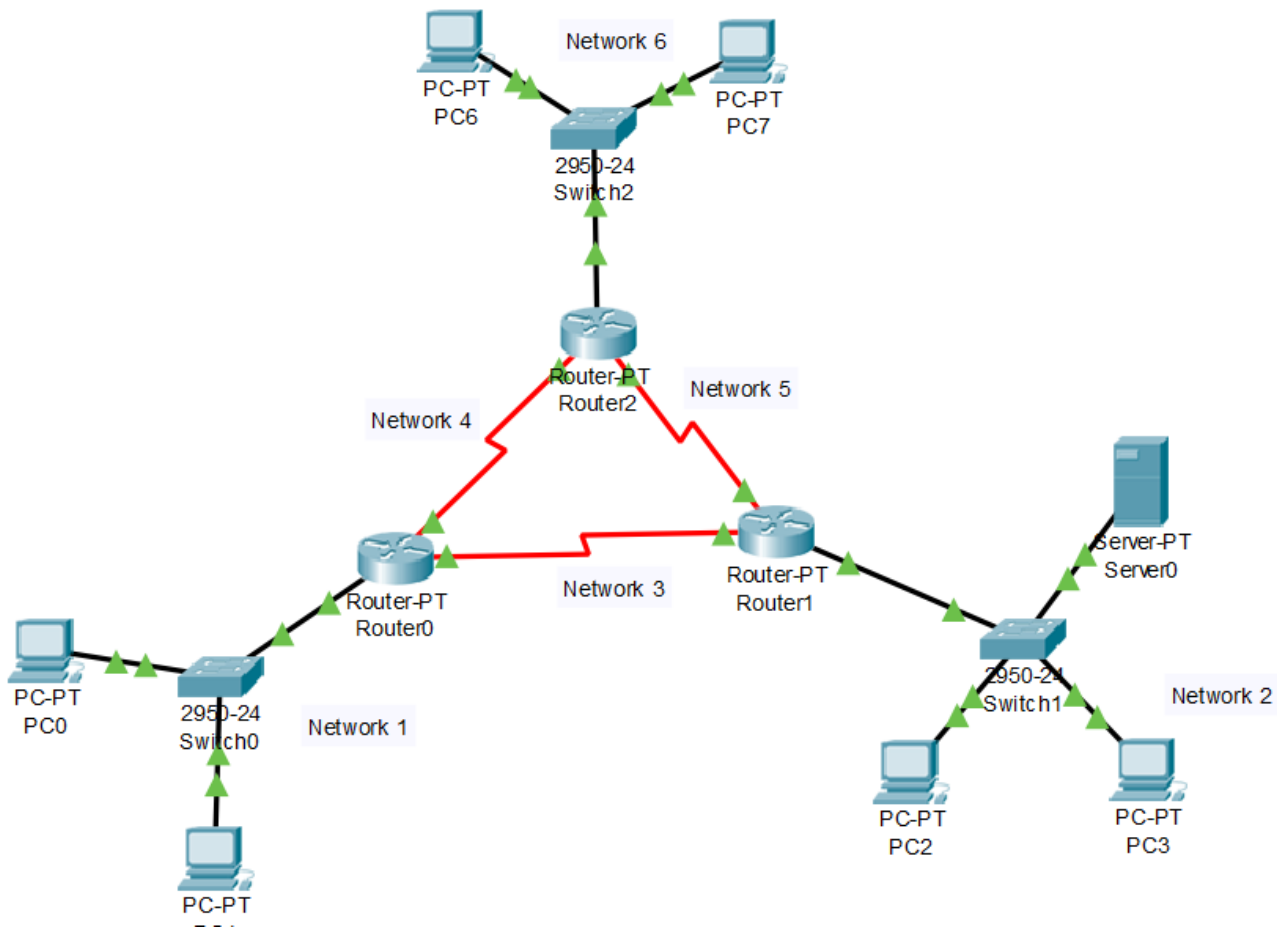
f. Check DNS server as:



Activity 3

Configuration of different Application services (SMTP, FTP, HTTP, TFTP, DHCP & DNS).

Topology



Objective

- Send Mails.
- Access FTP.
- Access HTTP(Browser).

Steps: Set up the network topology

- a. Setup same topology as Activity 3.
- b. Configure **Mail Server**.
- c. Setup Domain name.
- d. Add 2 users with username and password.
- e. Setup Desktop/Mail on 2 hosts and login with the accounts.
- f. Send mail from one to another.
- g. Configure **FTP Server**.
- h. Add account as earlier.
- i. Go to any host/Desktop/Command Prompt.

ftp 192.168.2.2

enter username and password

use command *dir*

PC6

Physical Config **Desktop** Programming Attributes

Configure Mail X

User Information

Your Name: receiver

Email Address: receiver@example.com

Server Information

Incoming Mail Server: 192.168.2.2

Outgoing Mail Server: 192.168.2.2

Logon Information

User Name: receiver

Password:

Save Clear Reset

PC1

Physical Config **Desktop** Programming Attributes

Configure Mail X

User Information

Your Name: sender

Email Address: sender@example.com

Server Information

Incoming Mail Server: 192.168.2.2

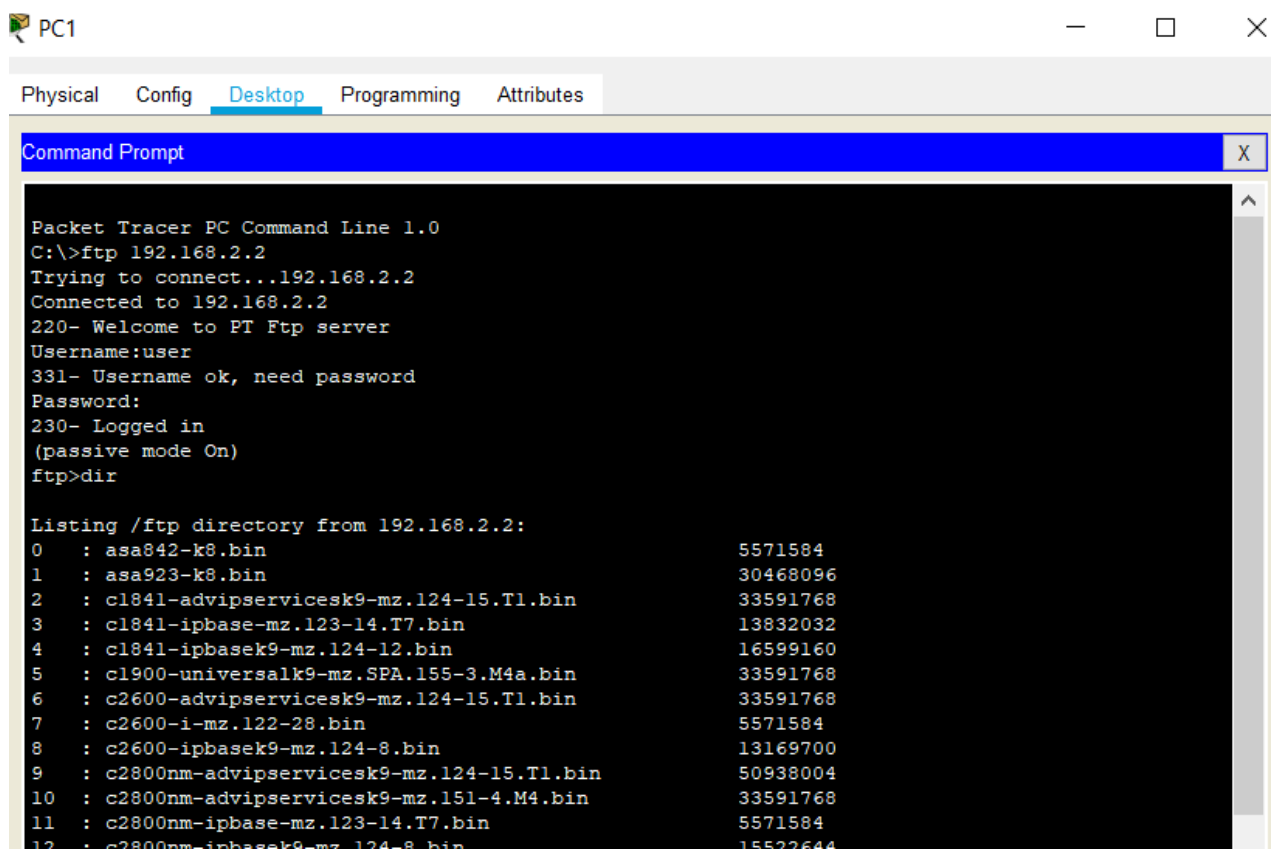
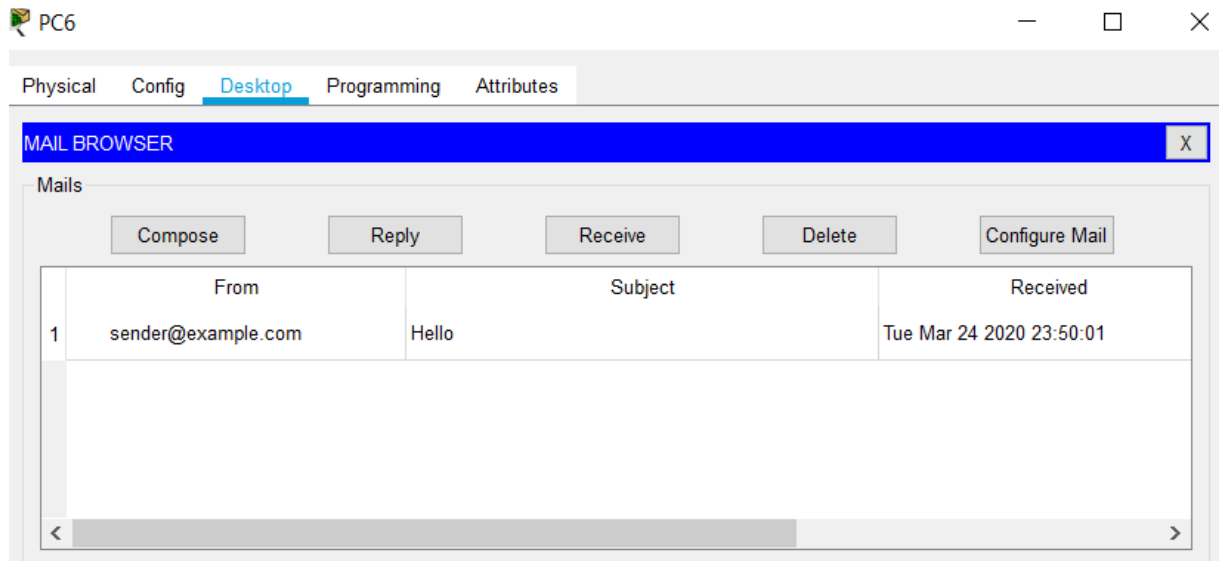
Outgoing Mail Server: 192.168.2.2

Logon Information

User Name: sender

Password:

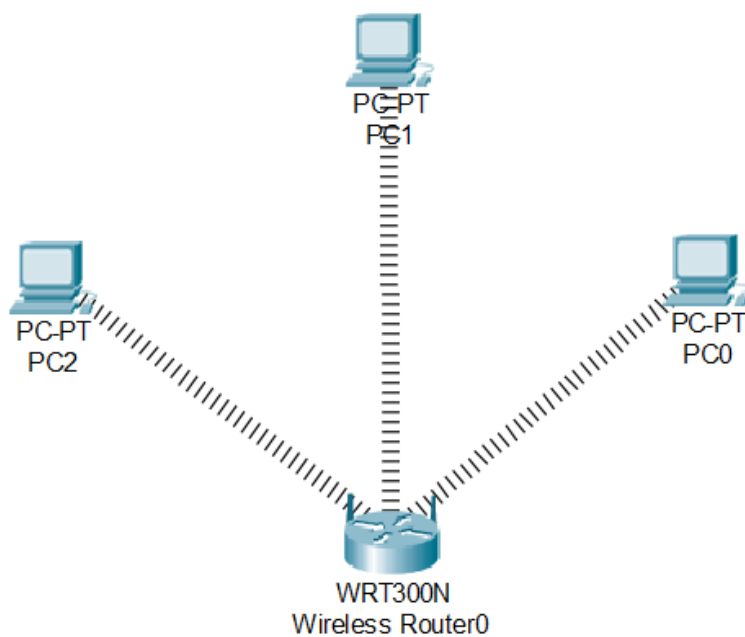
Save Clear Reset



Activity 4

Configure Wireless Network

Topology



Objective

- Connect 3 PCs to a wireless router
- Change the DHCP setting to a specific network range
- Configure the clients to obtain their address via DHCP

Background / Scenario

A home user wants to use a wireless router to connect 3 PCs. All 3 PCs should obtain their address automatically from the wireless router.

Step 1: Set up the network topology

- i. Add three generic PCs.
- j. Connect each PC to an Ethernet port to the wireless router using straight-through cables.

Step 2: Observe the default DHCP settings

- a. After the amber lights have turned green, click **PC0**. Click the **Desktop** tab. Select **IP Configuration**. Select **DHCP** to receive an IP address from **DHCP Enabled Router**.

Record the IP address of the default gateway: 192.168.0.1

- b. Close the **IP Configuration** window.
- c. Open a **Web Browser**.
- d. Enter the IP address of the default gateway recorded earlier into the URL field. When prompted, enter the username **admin** and password **admin**.
- e. Scroll through the Basic Setup page to view default settings, including the default IP address of the wireless router.
Notice that DHCP is enabled, the starting address of the DHCP range and the range of addresses available to clients.

Step 3: Change the default IP address of the wireless router.

- a. Within the Router IP Settings section, change the IP address to: **192.168.0.1**.
- b. Scroll to the bottom of the page and click **Save Settings**.
- c. If it is done correctly, the web page will display an error message. Close the web browser.
- d. Click **IP Configuration** to renew the assigned IP address. Click **Static**. Click **DHCP** to receive new IP address information from the wireless router.
- e. Open the web browser, enter the IP address **192.168.0.1** in the URL field. When prompted, enter the username **admin** and password **admin**.

Step 4: Change the default DHCP range of addresses.

- a. Notice the DHCP Server Start IP Address is updated to the same network as the Router IP.
- b. Starting IP Address **192.168.0.100**.
- c. Maximum Number of Users to **50**.
- d. Scroll to the bottom of the page and click **Save Settings**. Click **Continue**.
- e. Scroll back up to the DHCP Settings to ensure the change is made.
- f. Close the web browser.
- g. Select **Command Prompt**. Enter **ipconfig**. Record the IP address for PC0: **192.168.0.103**

Step 5: Enable DHCP on the other PCs.

- a. Click **PC1**.
- b. Select **Desktop** tab.

- c. Select **IP Configuration**.
- d. Click **DHCP**. Record the IP address for PC1: 192.168.0.101
- e. Close the configuration window.
- f. Enable DHCP on **PC2** following the steps for PC1.

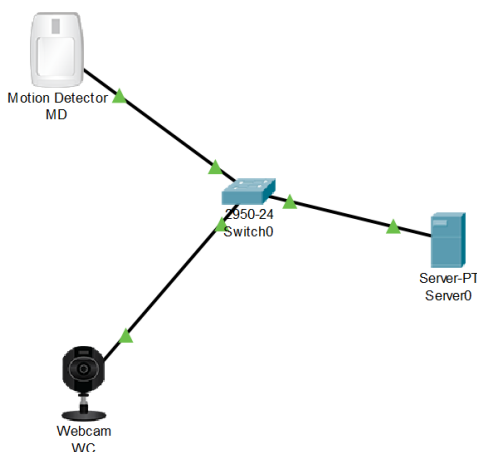
Step 6: Verify connectivity

- j. Click **PC2** and select the **Desktop** tab.
- k. Select **Command Prompt**.
- l. Type **ipconfig** at the prompt to view the IP configuration.
- m. Type **ping 192.168.0.1** to ping the wireless router.
Type **ping 192.168.0.103** to ping PC0.
Type **ping 192.168.0.101** to ping PC1.
The pings to all devices should be successful.

Activity 5

IOT Devices

Topology



Objective

- Connect various IOT devices.
- Trigger IOT Events.

Steps: Topology

- Connect devices as shown.
- Assign static IP addresses to all devices.
- Turn on registration server from IOT service section.
- Double click on IOT devices and select remote server.
- Enter server IP address.
- Enter username and password as:
Username=admin
Password=cisco
- Got to the web browser on the server, enter IP address of server.
- Login with same username password.
- You can now configure devices and also make events.

