



FATIMA JINNAH WOMEN UNIVERSITY
Department of Software Engineering

Computer Communication and Networks

Project Report

Submitted To: Engr. Sir Shoaib

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Question

Submit and demonstrate the project.

Solution

1. Network Infrastructure Project Overview

Our network infrastructure project encompasses four buildings, each housing multiple floors with various departments, as outlined in the accompanying table. It involves strategically designing and configuring the network to ensure seamless communication and connectivity among the diverse departments distributed across the floors. The goal is to establish an efficient and secure network that aligns with the overarching objectives of the project.

Each floor has departments as provided in the table below.;

| First Floor | | | |
|-------------|----------------|-----------|-----------------|
| No. | Departments | No. of PC | No. of Printers |
| 1 | Management | 20 | 4 |
| 2 | Research | 20 | 4 |
| 3 | Human Resource | 20 | 4 |

| Second Floor | | | |
|--------------|-------------|-----------|-----------------|
| No. | Departments | No. of PC | No. of Printers |
| 1 | Marketing | 20 | 4 |
| 2 | Accounting | 20 | 4 |
| 3 | Finance | 20 | 4 |

| Third Floor | | | | |
|-------------|---------------------|-----------|-----------------|----------------|
| No. | Departments | No. of PC | No. of Printers | No. of Servers |
| 1 | Logistics and store | 20 | 4 | |

| | | | | |
|---|---------------|-------------|---|-------------------------|
| 2 | Customer care | 20 | 4 | |
| 3 | Server Room | 2 Admin PCs | | 3 (DHCP,HTTP and EMAIL) |

2. Technologies Implemented

- **Network Simulation Software:** Cisco Packet Tracer
- **Routing Protocol:** OSPF
- **Wireless Network:** Cisco Access Point
- **DHCP:** Dedicated DHCP Server
- **Security:** SSH, Port-Security

3. Network Topology

3.1 Hierarchical Design

- **Core Layer:** OSPF Routing
- **Distribution Layer:** Inter-VLAN Routing
- **Access Layer:** Switchport Security, VLANs
- **Wireless Layer:** Cisco Access Point

4. Configuration Steps

4.1. Basic Device Settings:

- Set Hostnames, Line Console, and Enable passwords.
- Configure Banner messages.
- Disable domain IP lookup.
- Encrypt all configured passwords.

4.2. VLANs and Subnetting:

- Each department in a different VLAN (e.g., 10, 20, 30).
- Use base address 192.168.10.0 for subnetting.
- Identify subnet mask, usable IP address range, and broadcast address for each subnet.

4.3. Inter-VLAN Routing:

- Configure Switch Virtual Interface (SVI) for each VLAN.

4.4. DHCP Configuration:

- Set up a dedicated DHCP server in the server room.
- All devices obtain IPv4 addresses dynamically.

4.5. SSH Configuration:

- Configure SSH for secure remote access on all routers.

4.6. OSPF Routing:

- Use OSPF as the routing protocol to advertise routes.

4.7. Port-Security:

- Implement switchport security on switches.
- Use sticky command for MAC address and set Violation mode to shutdown.

4.8. Wireless Network:

- Set up Cisco Access Point in each department.
- Enable wireless networks for around 60 users in each department.

4.9. End Device Configurations:

- Configure all end devices with appropriate IP addresses based on subnetting.

4.10. Server Configurations:

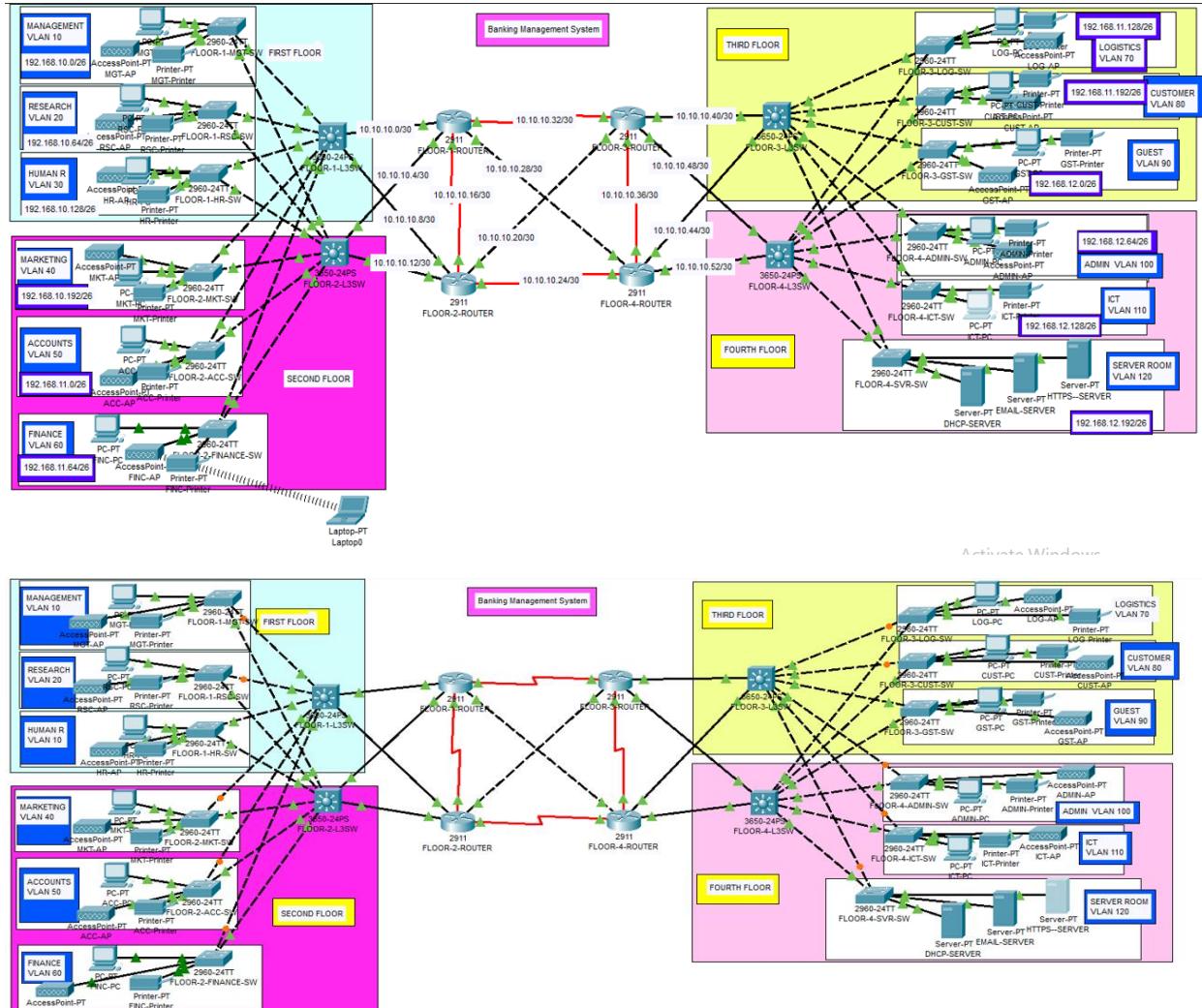
- Create HTTP and E-mail servers.

4.11. Test and Verification:

- Verify network communication between devices in different departments.

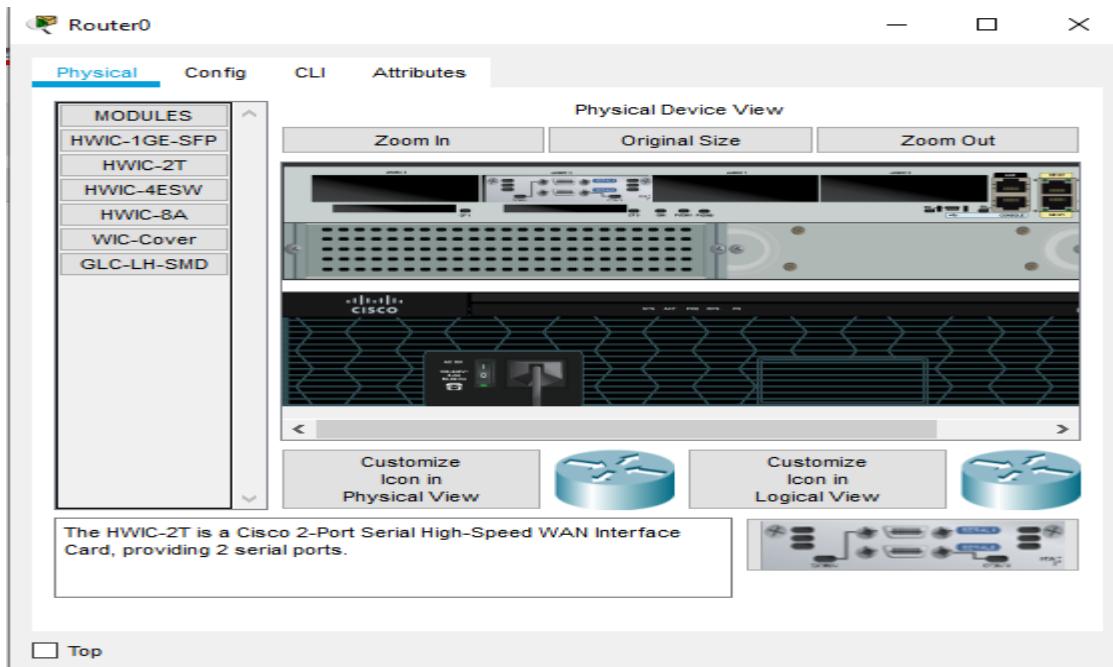
5. Configurations

- Full Network



Steps

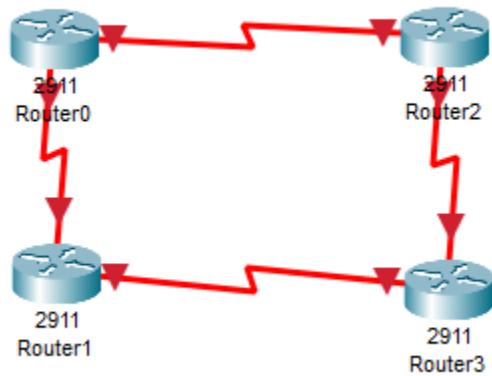
- Making Serial Port on Router:
- Turn Off the router through button.
- Drag HWIC-2T to any free slot.
- Then, turn on the router.



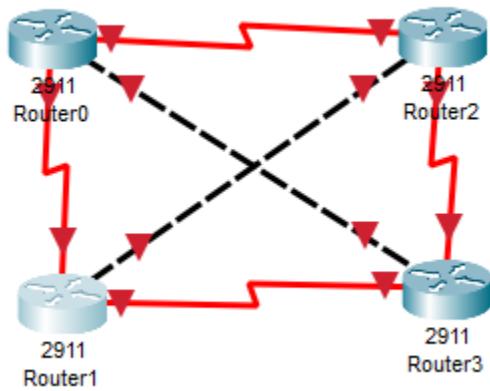
- Do the same on each router. Now serial interfaces are created on the routers. Serial cable can be connected now.



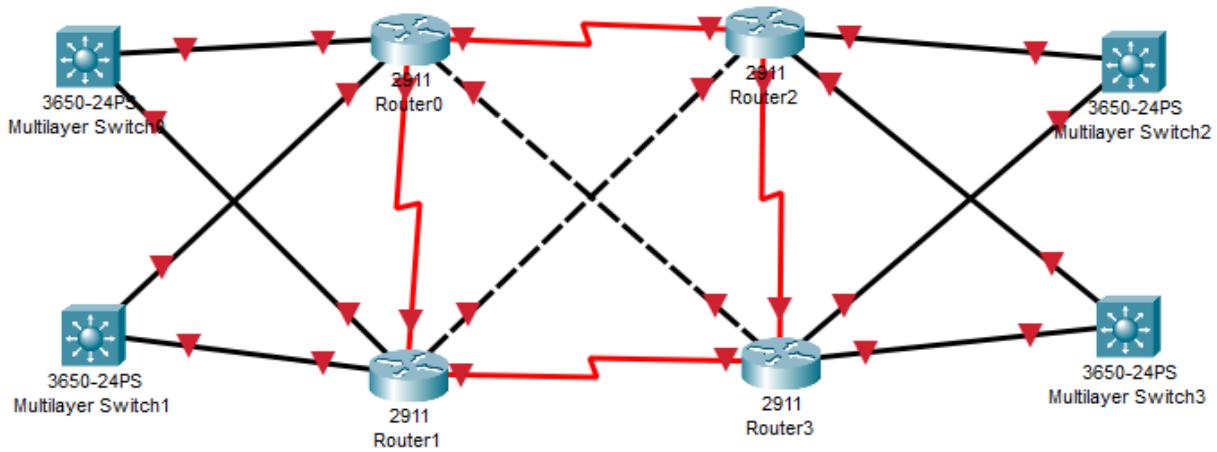
- All routers are connected through serial connection.



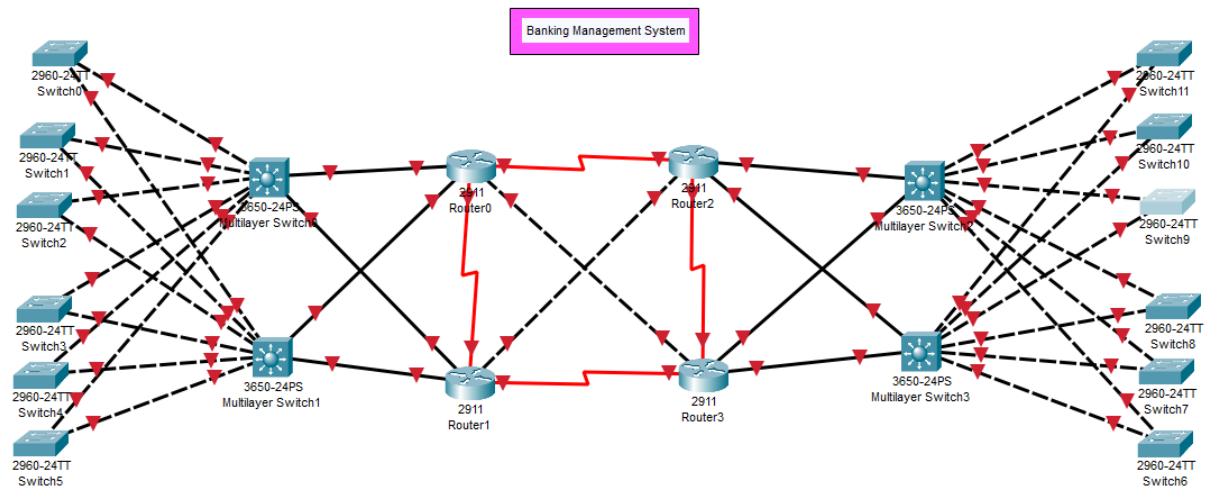
- We need to make connections in diagonals as well because in the above if one router is down it will lose the connection to the both adjacent ones.
- Use cross over cable to connect diagonals.



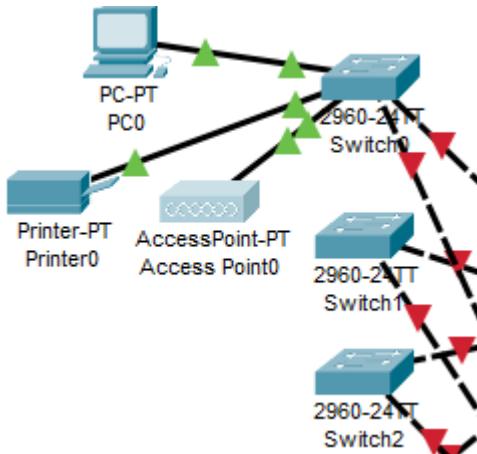
- Connected co layer to the distribution layer.



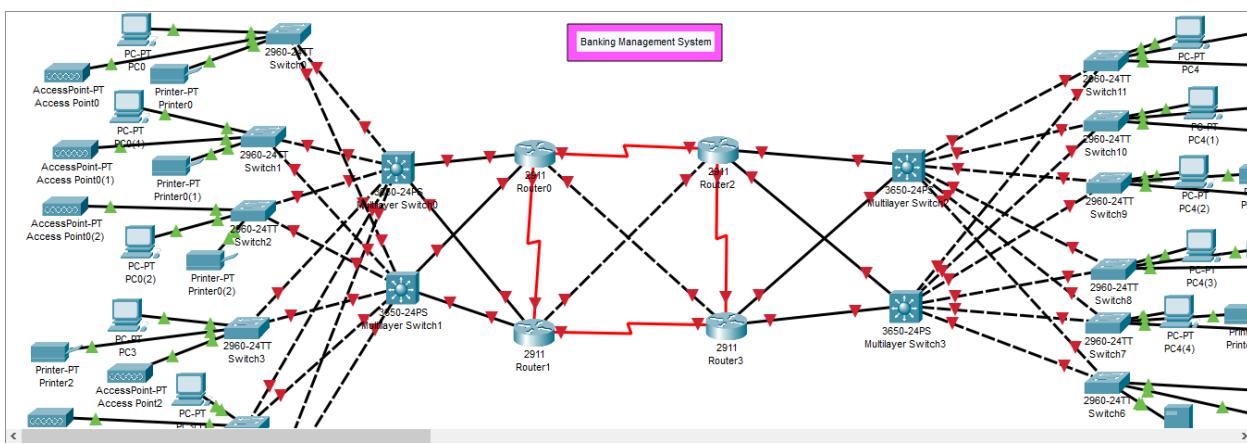
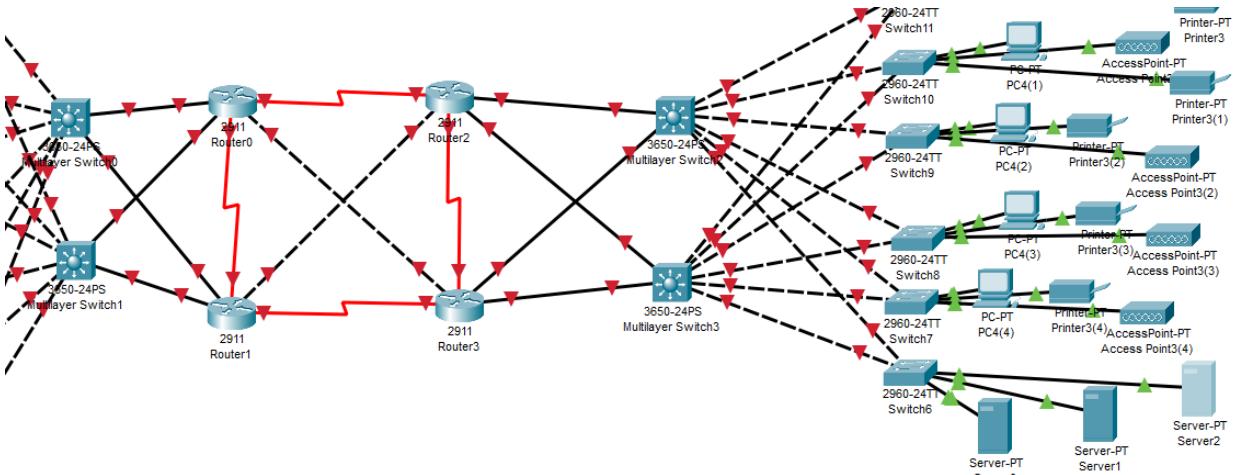
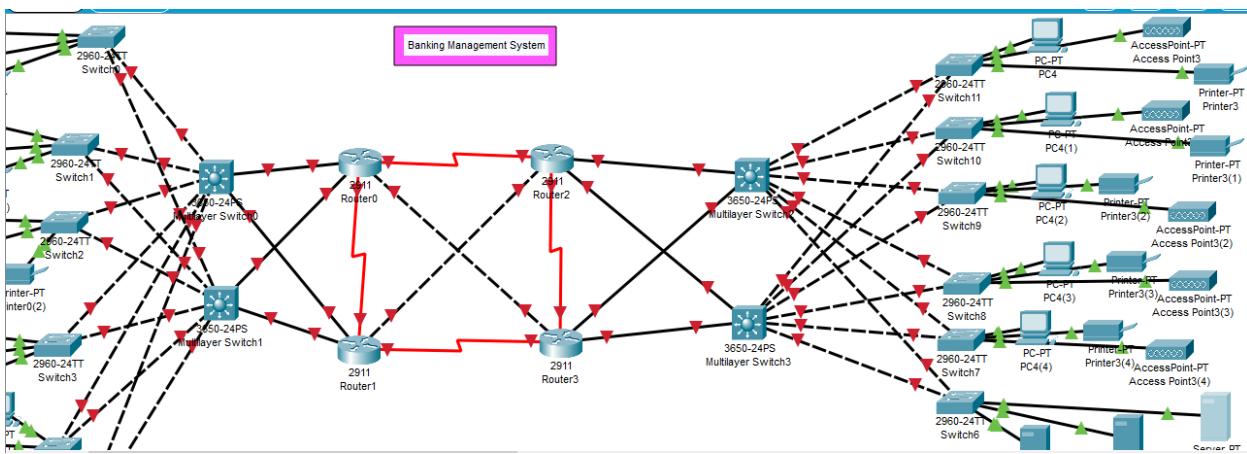
- Connect distribution layer to the access layer.



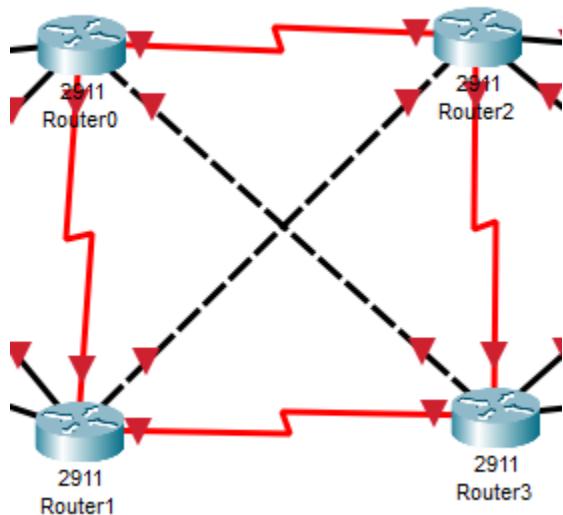
- Connecting a PC, printer and access point to each department.



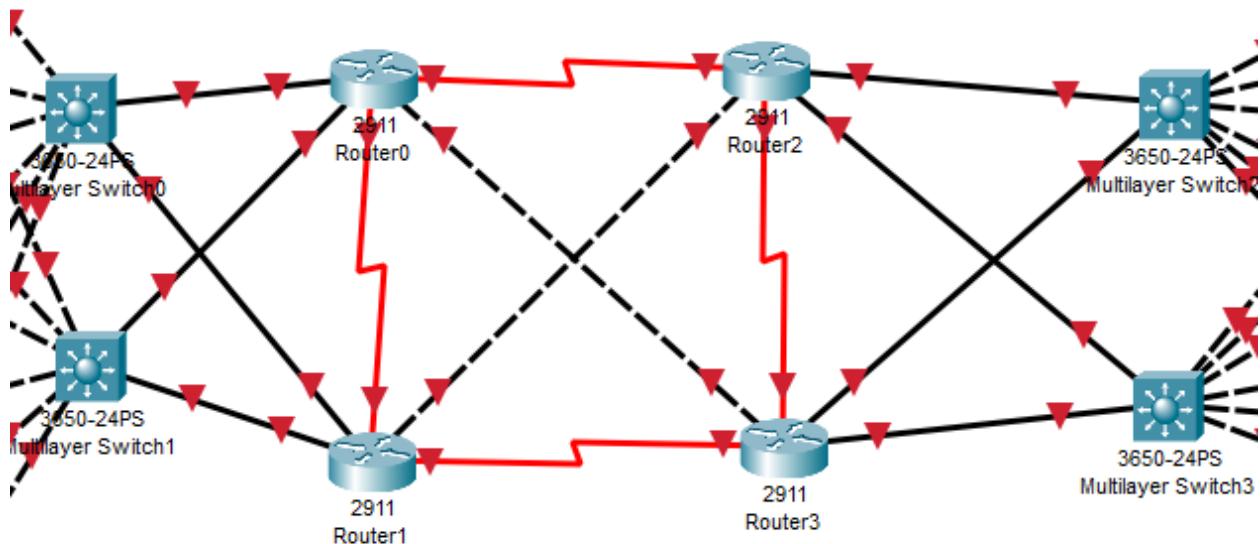
- All host devices are connected to the switches.



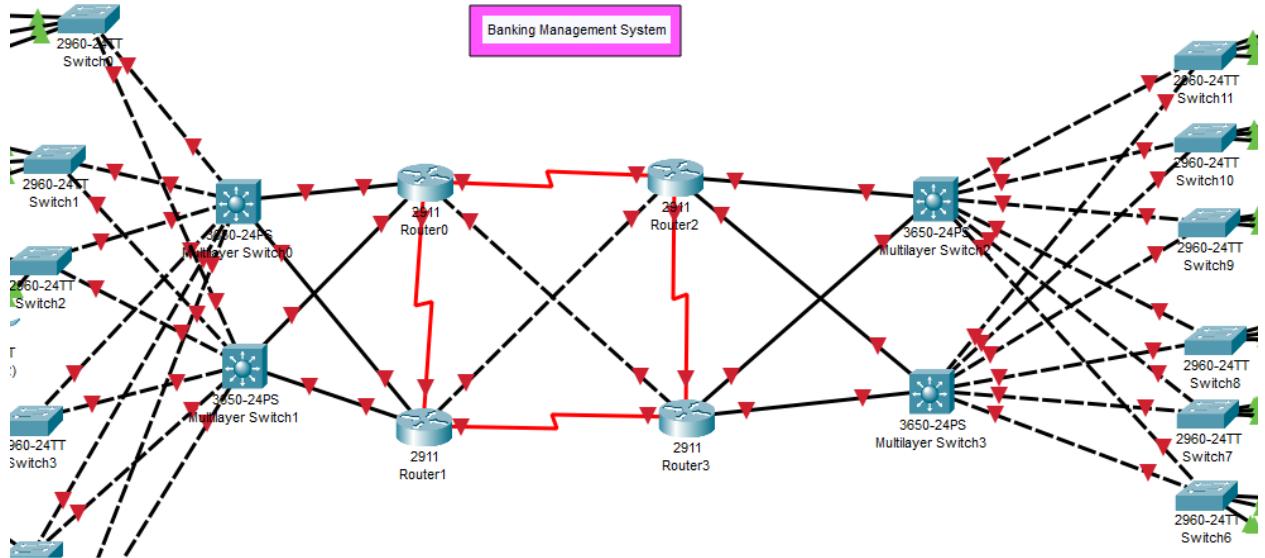
- Core Layer



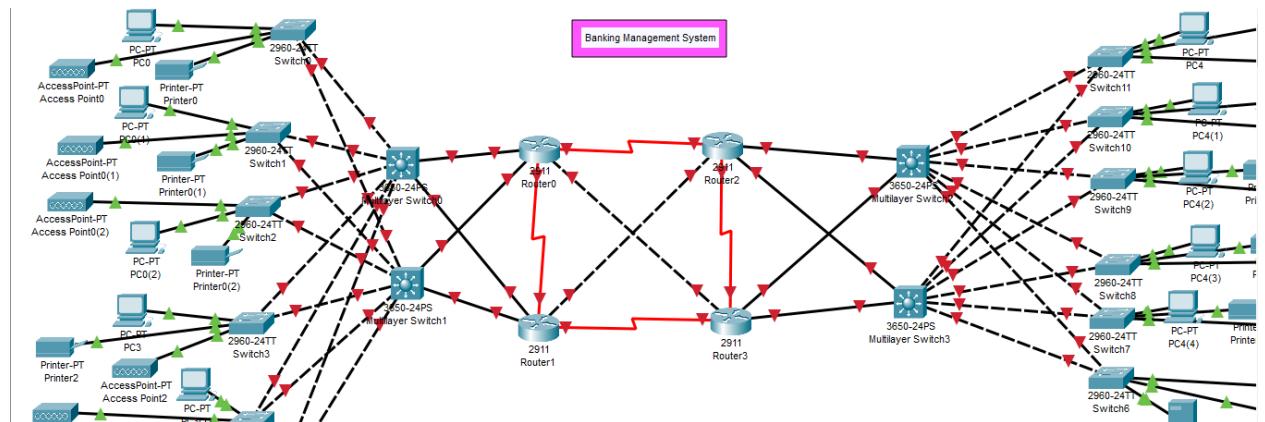
- Distribution Layer



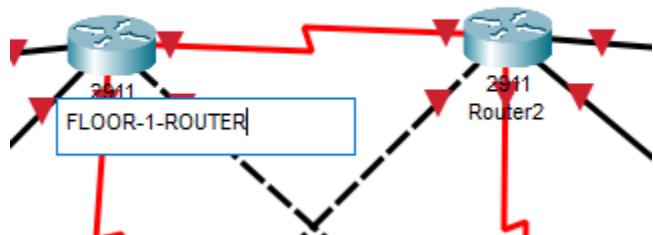
- Access Layer

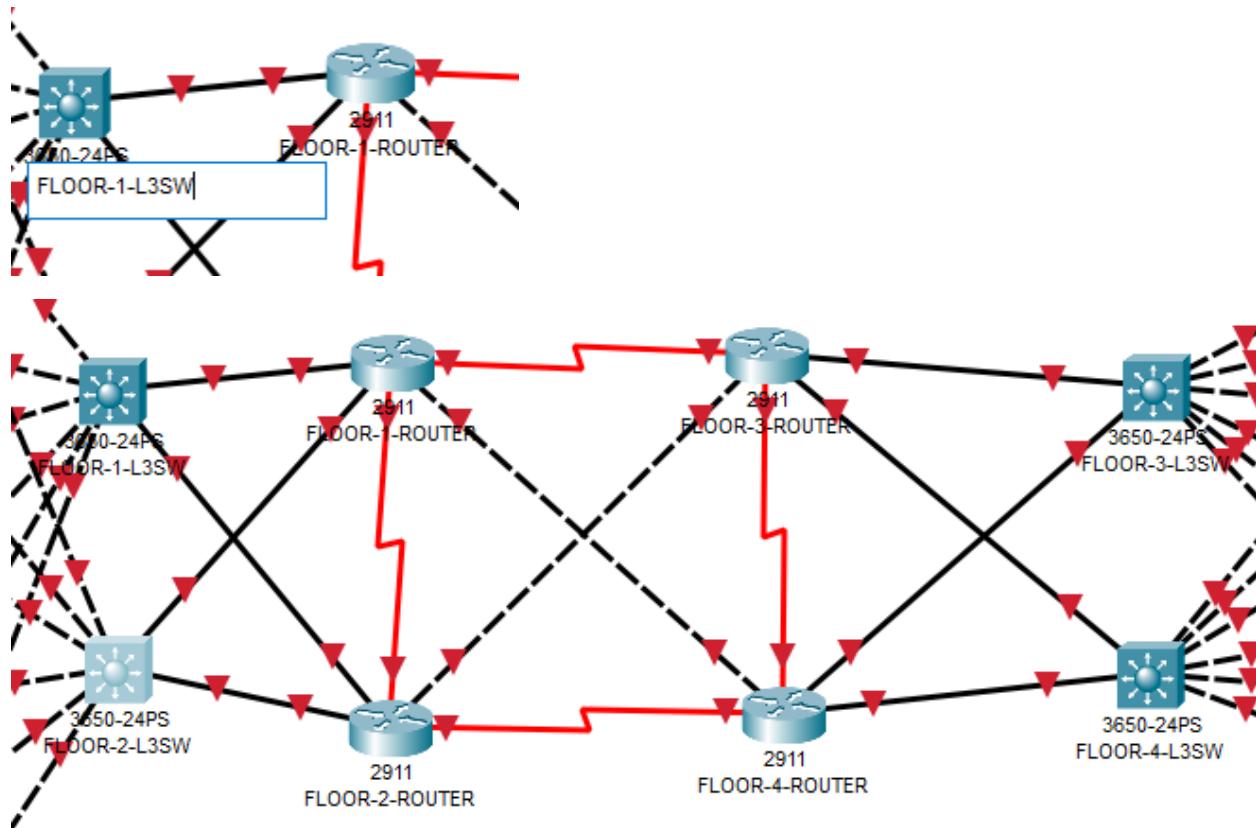
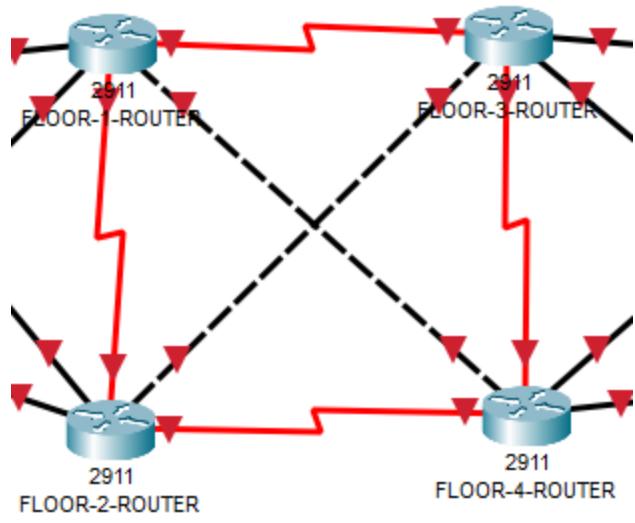


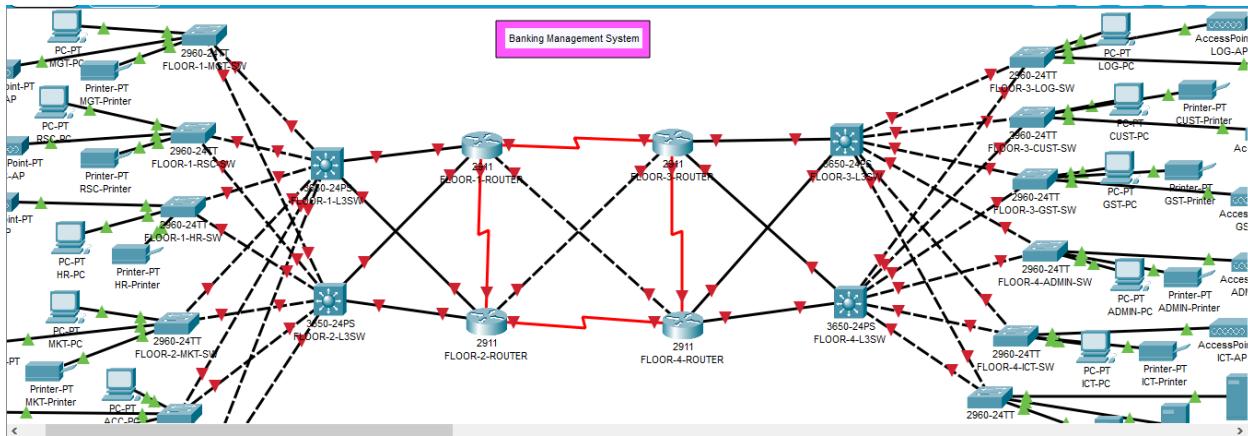
- Host Devices



- Naming all the Layers.







- Configuring the topology.

The screenshot shows a software interface for managing network ports. The top navigation bar includes tabs for Physical, Config (which is selected), CLI, and Attributes. On the left, a sidebar lists port options: Settings, Algorithm Settings, ROUTING (Static, RIP), SWITCHING, VLAN Database, INTERFACE (GigabitEthernet0/0, GigabitEthernet0/1, GigabitEthernet0/2, Serial0/1/0, Serial0/1/1, Serial0/2/0, Serial0/2/1). The main panel displays configuration for GigabitEthernet0/0. It shows Port Status as On, Bandwidth set to 1000 Mbps, Duplex set to Full Duplex, and MAC Address as 00E0.F940.B201. Under IP Configuration, there are fields for IP Address and Subnet Mask, both currently empty. The Tx Ring Limit is set to 10. At the bottom, a section titled 'Equivalent IOS Commands' contains the following text:

```
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#interface GigabitEthernet0/0
Router(config-if)#

```

- Turn On all the interfaces.

| INTERFACE |
|--------------------|
| GigabitEthernet0/0 |
| GigabitEthernet0/1 |
| GigabitEthernet0/2 |
| Serial0/1/0 |
| Serial0/1/1 |
| Serial0/2/0 |
| Serial0/2/1 |

- Do the same to all routers.

FLOOR-2-ROUTER

Physical Config CLI Attributes

GLOBAL

- Settings
- Algorithm Settings

ROUTING

- Static
- RIP

SWITCHING

- VLAN Database

INTERFACE

- GigabitEthernet0/0
- GigabitEthernet0/1
- GigabitEthernet0/2
- Serial0/1/0
- Serial0/1/1
- Serial0/2/0

GigabitEthernet0/0

Port Status On

Bandwidth 1000 Mbps 100 Mbps 10 Mbps Auto

Duplex Half Duplex Full Duplex Auto

MAC Address 00D0.BA63.CE01

IP Configuration

IP Address

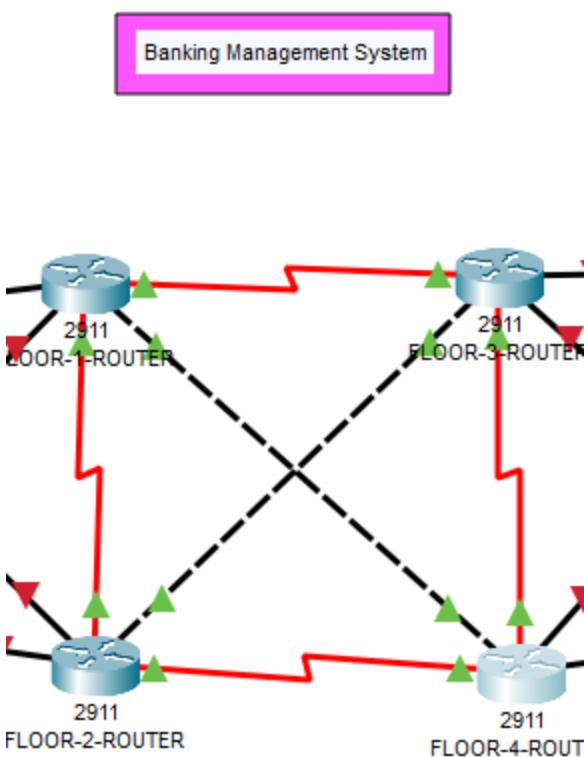
Subnet Mask

Tx Ring Limit 10

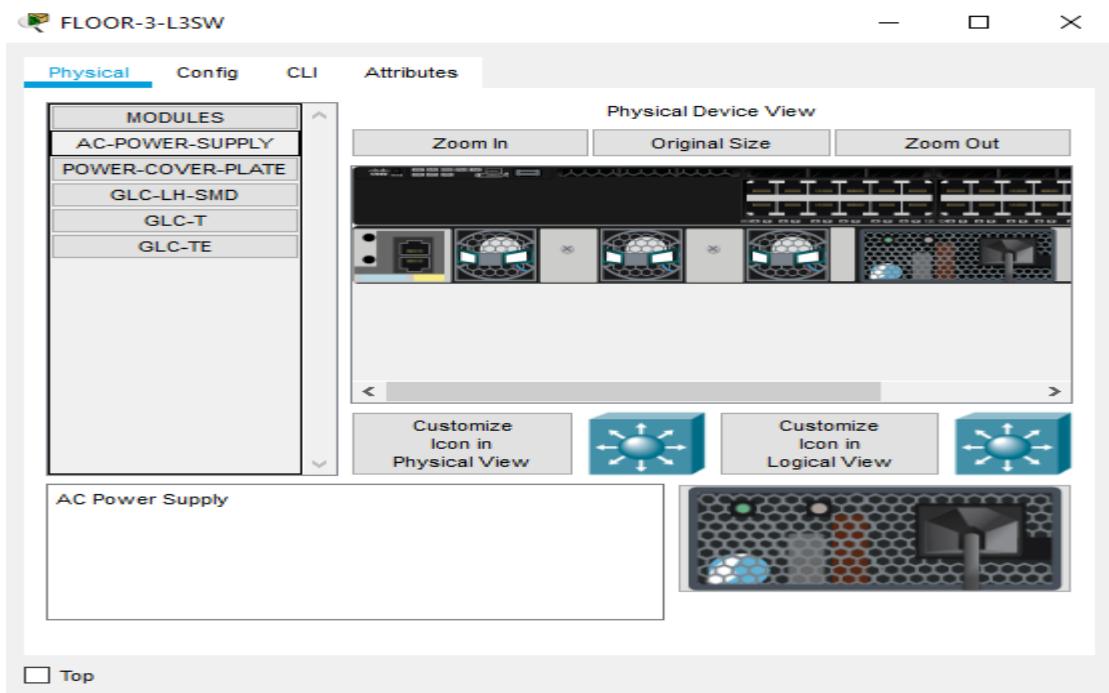
Equivalent IOS Commands

```
Router(config)#interface GigabitEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
```

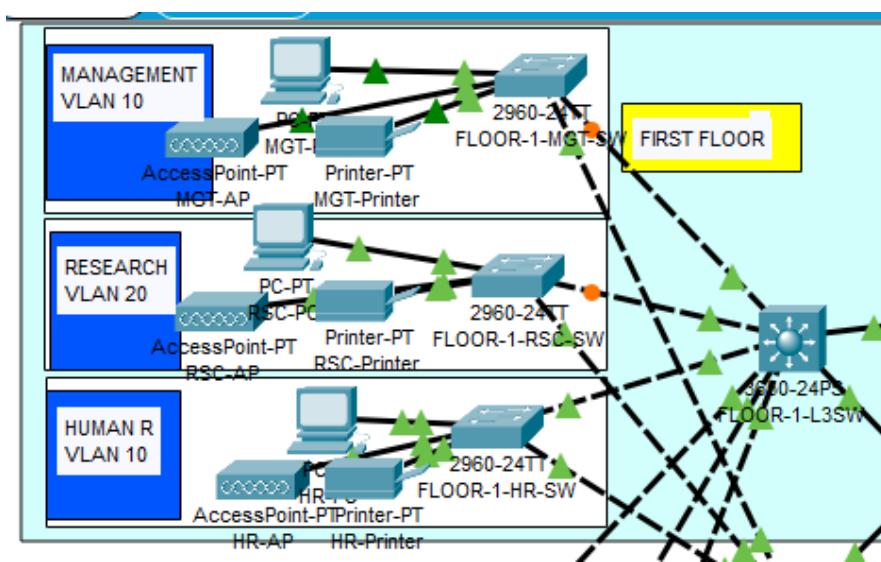
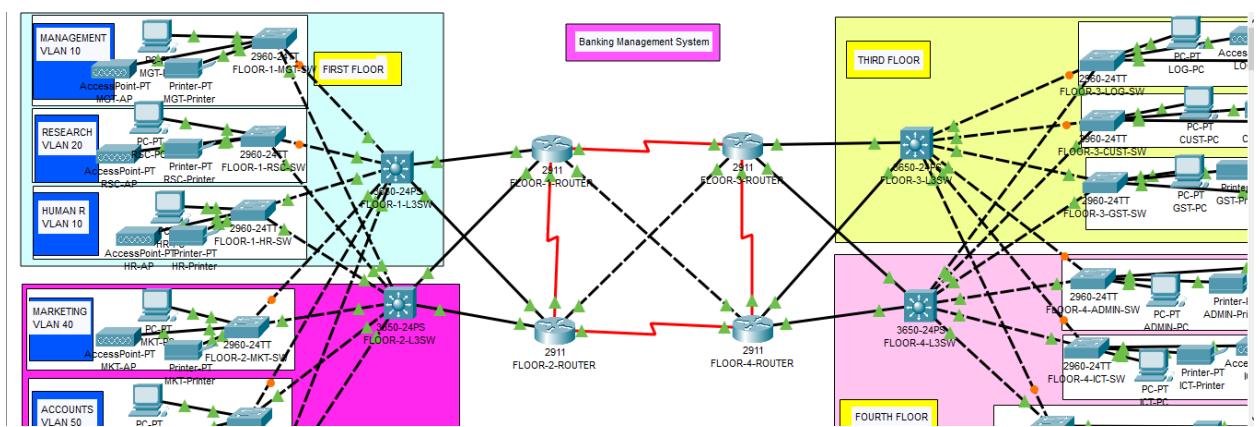
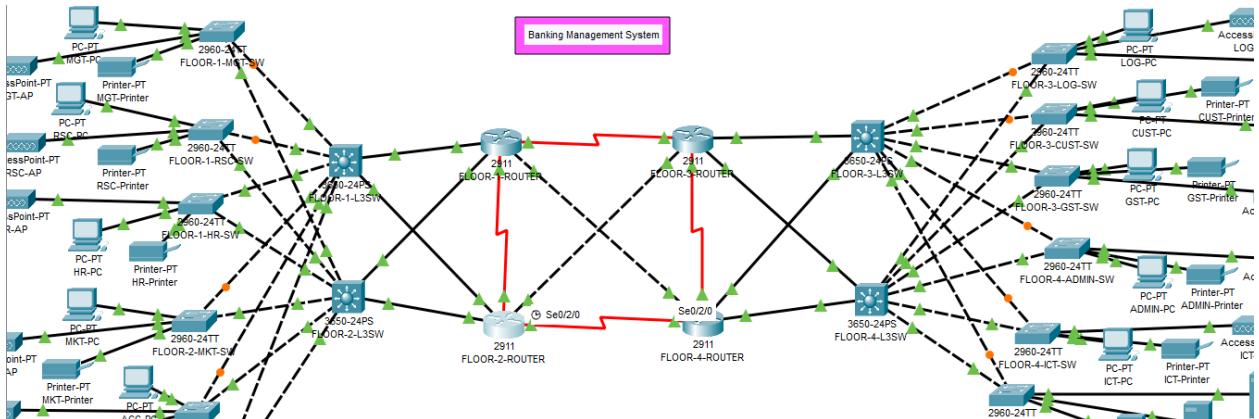
Top

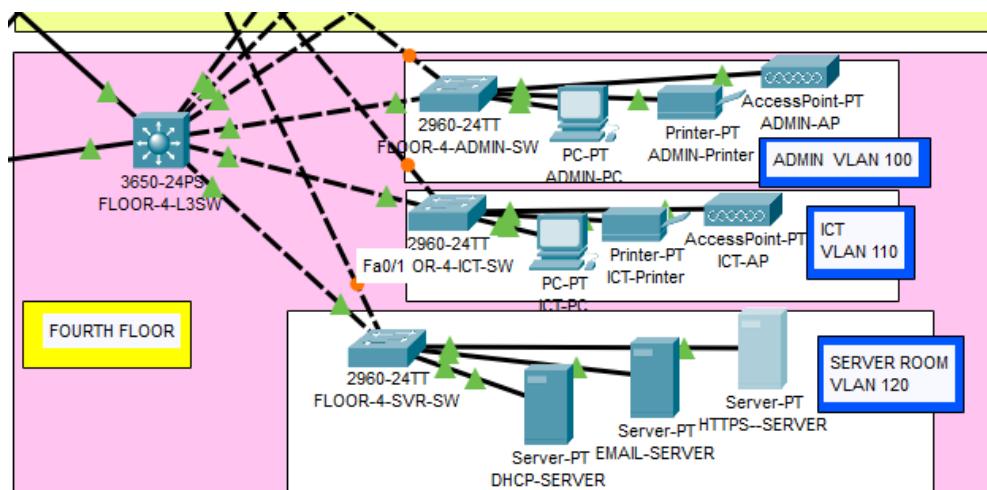
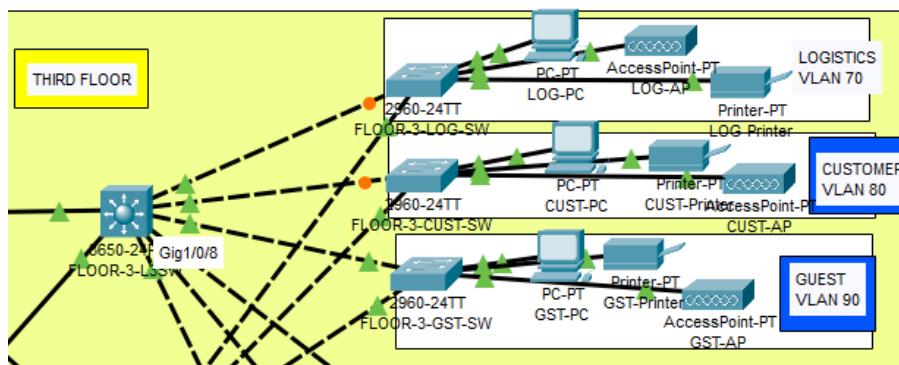
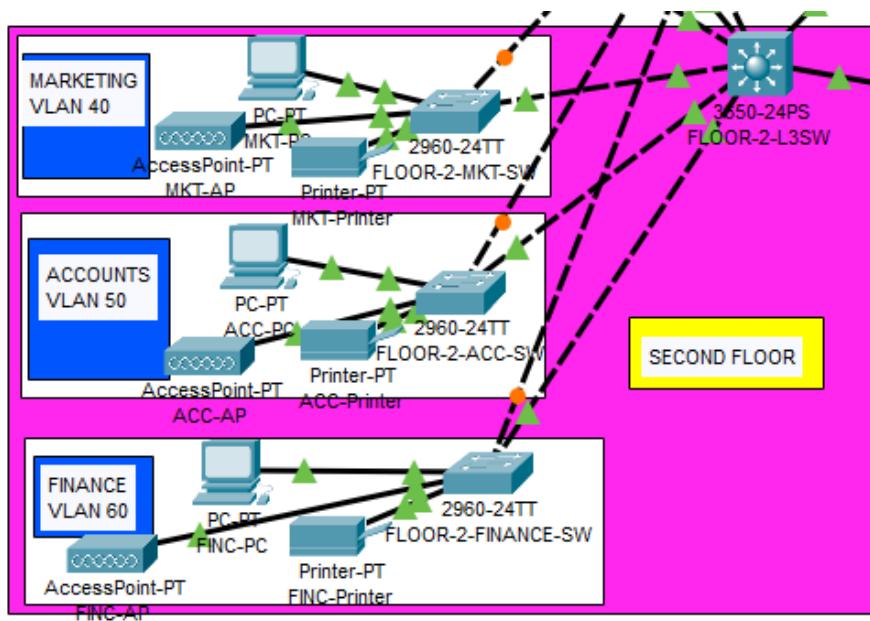


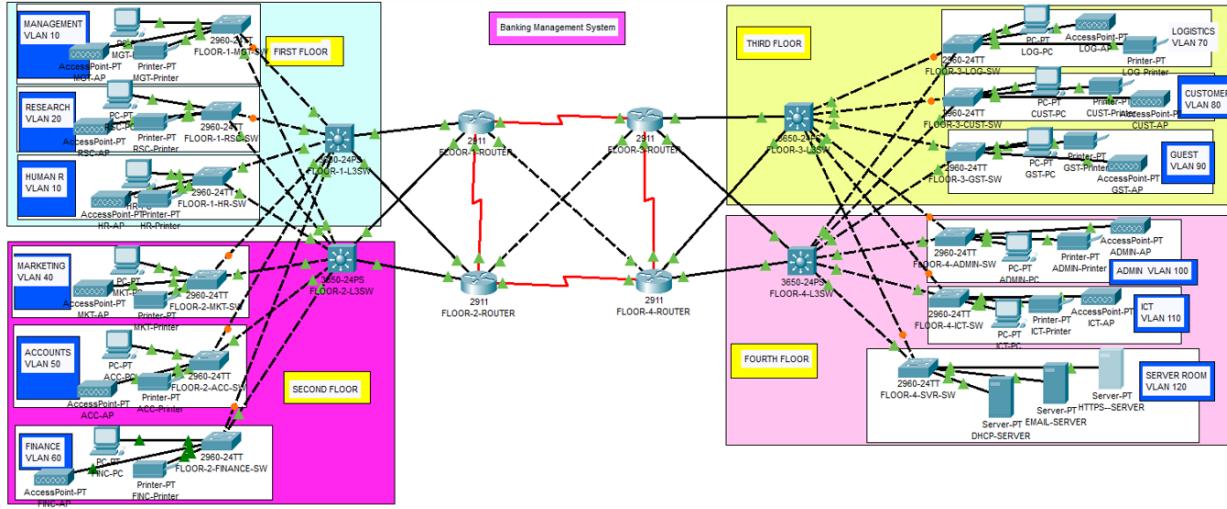
- Now, give the power supply to the switches.



- Everything has turned green, but few will stay orange because of spanning tree protocol.







Configuration

- OSPF as the routing protocol to advertise routes.
- Each department is required to have a wireless network for the users.
- Host devices in the network are required to obtain IPv4 addresses automatically.
- All devices in the network are expected to obtain an IP address dynamically from the dedicated DHCP servers located at the server room.
- Create HTTP, and Email servers.
- Configure SSH in all routers for remote login.

Configuration Steps

- Basic settings to all devices plus ssh on the routers and layer 3 switches.
- Begin with the Layer 2 switches. (Access layer)

Floor 1 Management Switch:

FLOOR-1-MGT-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname F1-Mgt-SW
F1-Mgt-SW(config)#banner motd #This Floor1-mgt switch#
F1-Mgt-SW(config)#line console 0
F1-Mgt-SW(config-line)#password cisco
F1-Mgt-SW(config-line)#login
F1-Mgt-SW(config-line)#exit
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#line vty 0 15
F1-Mgt-SW(config-line)#password cisco
F1-Mgt-SW(config-line)#login
F1-Mgt-SW(config-line)#exit
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#no ip domain-lookup
F1-Mgt-SW(config)#enable password cisco
F1-Mgt-SW(config)#service password-encryption
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#do wr
Building configuration...
[OK]
F1-Mgt-SW(config)#
F1-Mgt-SW#
```

Ctrl+F6 to exit CLI focus

Top

- **Commands to Configure**

Switch>enable

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#hostname F1-Mgt-SW

F1-Mgt-SW(config)#banner motd #This Floor1-mgt switch#

F1-Mgt-SW(config)#line console 0

F1-Mgt-SW(config-line)#password cisco

F1-Mgt-SW(config-line)#login

F1-Mgt-SW(config-line)#exit

F1-Mgt-SW(config)#+

F1-Mgt-SW(config)#line vty 0 15

```
F1-Mgt-SW(config-line)#password cisco
F1-Mgt-SW(config-line)#login
F1-Mgt-SW(config-line)#exit
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#no ip domain-lookup
F1-Mgt-SW(config)#enable password cisco
F1-Mgt-SW(config)#service password-encryption
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#do wr
Building configuration...
[OK]
F1-Mgt-SW(config)#
F1-Mgt-SW#
```

- Run the same configuration on all Layer 2 switches.

FLOOR-1-RSC-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config-line)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config-line)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus

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Top

FLOOR-1-HR-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus

Top

FLOOR-2-MKT-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus

Top

FLOOR-2-ACC-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus **Copy** **Paste**

Top

FLOOR-2-FINANCE-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus **Copy** **Paste**

Top

FLOOR-3-LOG-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus **Copy** **Paste**

Top

FLOOR-3-CUST-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus **Copy** **Paste**

Top

FLOOR-3-GST-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config-line)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config-line)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus **Copy** **Paste**

Top

FLOOR-4-ADMIN-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config-line)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config-line)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus **Copy** **Paste**

Top

FLOOR-4-ICT-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus **Copy** **Paste**

Top

FLOOR-4-SVR-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-2-Sw
Layer-2-Sw(config)#banner motd #This is Layer-2-Sw#
Layer-2-Sw(config)#
Layer-2-Sw(config)#line console 0
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#line vty 0 15
Layer-2-Sw(config-line)#password cisco
Layer-2-Sw(config-line)#login
Layer-2-Sw(config-line)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#no ip domain-lookup
Layer-2-Sw(config)#enable password cisco
Layer-2-Sw(config)#service password-encryption
Layer-2-Sw(config)#
Layer-2-Sw(config)#
Layer-2-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus **Copy** **Paste**

Top

Layer 2 switches are done.

- **Distribution Layer Configuration:**

```
*LINK-5-CHANGED: Interface GigabitEthernet1/0/2, changed state to up
*LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/2,
changed state to up

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname F1-13sw
F1-13sw(config)#banner motd #This 13-switch#
F1-13sw(config)#line console 0
F1-13sw(config-line)#password cisco
F1-13sw(config-line)#login
F1-13sw(config-line)#exit
F1-13sw(config-line)#line vty 0 15
F1-13sw(config-line)#password cisco
F1-13sw(config-line)#login
F1-13sw(config-line)#exit
F1-13sw(config)##
F1-13sw(config)#no ip domain-lookup
F1-13sw(config)#enable password cisco
F1-13sw(config)#service password-encryption
F1-13sw(config)#
```

Ctrl+F6 to exit CLI focus

Copy

Paste

Top

- **Commands for configuration**

Switch>enable

Switch#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#hostname F1-13sw

F1-13sw(config)#banner motd #This 13-switch#

F1-13sw(config)#line console 0

F1-13sw(config-line)#password cisco

F1-13sw(config-line)#login

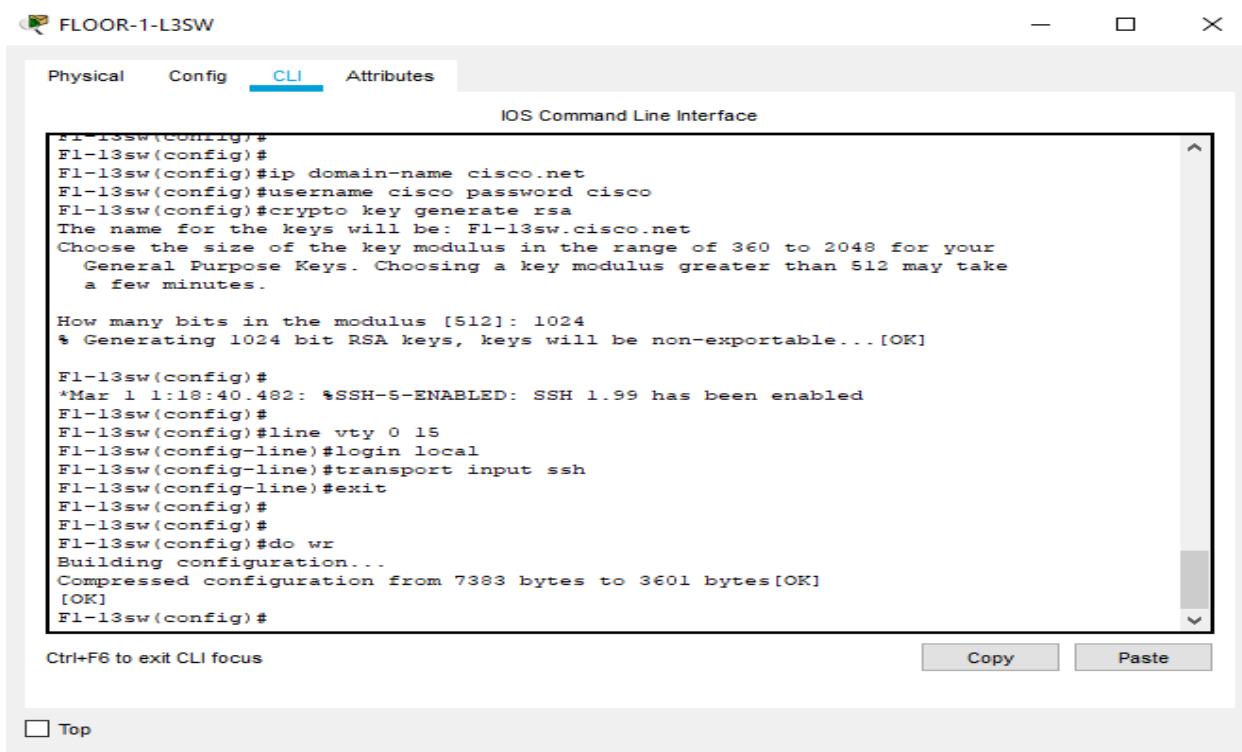
F1-13sw(config-line)#exit

F1-13sw(config)#line vty 0 15

```
F1-13sw(config-line)#password cisco
F1-13sw(config-line)#login
F1-13sw(config-line)#exit
F1-13sw(config)#
F1-13sw(config)#
F1-13sw(config)#no ip domain-lookup
F1-13sw(config)#enable password cisco
F1-13sw(config)#service password-encryption
F1-13sw(config)#

```

- **Configure SSH on this switch:**



- **Commands for configuration**

```
F1-13sw(config)#ip domain-name cisco.net
F1-13sw(config)#username cisco password cisco
F1-13sw(config)#crypto key generate rsa
The name for the keys will be: F1-13sw.cisco.net
Choose the size of the key modulus in the range of 360 to 2048 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take
a few minutes.
```

How many bits in the modulus [512]: 1024
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

```
F1-13sw(config)#  
*Mar 1 1:18:40.482: %SSH-5-ENABLED: SSH 1.99 has been enabled  
F1-13sw(config)#  
F1-13sw(config)#line vty 0 15  
F1-13sw(config-line)#login local  
F1-13sw(config-line)#transport input ssh  
F1-13sw(config-line)#exit  
F1-13sw(config)#  
F1-13sw(config)#  
F1-13sw(config)#do wr  
Building configuration...  
Compressed configuration from 7383 bytes to 3601 bytes[OK]  
[OK]  
F1-13sw(config)#
```

The screenshot shows the Cisco IOS CLI interface for a device named 'Layer-3-Sw'. The interface includes tabs for Physical, Config, CLI (which is selected), and Attributes. The title bar says 'IOS Command Line Interface'. The main window displays the configuration commands entered by the user:

```
Switch>enable  
Switch>configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Switch(config)#  
Switch(config)#hostname Layer-3-Sw  
Layer-3-Sw(config)#banner motd #This is Layer-3-Sw#  
Layer-3-Sw(config)#  
Layer-3-Sw(config)#line console 0  
Layer-3-Sw(config-line)#password cisco  
Layer-3-Sw(config-line)#login  
Layer-3-Sw(config-line)#exit  
Layer-3-Sw(config)#  
Layer-3-Sw(config)#ip domain-name cisco.net  
Layer-3-Sw(config)#username cisco password cisco  
Layer-3-Sw(config)#crypto key generate rsa  
The name for the keys will be: Layer-3-Sw.cisco.net  
Choose the size of the key modulus in the range of 360 to 2048 for your  
General Purpose Keys. Choosing a key modulus greater than 512 may take  
a few minutes.  
How many bits in the modulus [512]: 1024  
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]  
Layer-3-Sw(config)#line vty 0 15  
*Mar 1 1:28:0.270: %SSH-5-ENABLED: SSH 1.99 has been enabled  
Layer-3-Sw(config-line)#login local  
Layer-3-Sw(config-line)#transport input ssh  
Layer-3-Sw(config-line)#exit  
Layer-3-Sw(config)#  
Layer-3-Sw(config)#no ip domain-lookup  
Layer-3-Sw(config)#enable password cisco  
Layer-3-Sw(config)#service password-encryption  
Layer-3-Sw(config)#  
Layer-3-Sw(config)#do wr  
Building configuration...  
Compressed configuration from 7383 bytes to 3601 bytes[OK]  
[OK]
```

At the bottom left of the CLI window, there is a note: 'Ctrl+F6 to exit CLI focus'.

FLOOR-3-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-3-Sw
Layer-3-Sw(config)#banner motd #This is Layer-3-Sw#
Layer-3-Sw(config)#
Layer-3-Sw(config)#line console 0
Layer-3-Sw(config-line)#password cisco
Layer-3-Sw(config-line)#login
Layer-3-Sw(config-line)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#ip domain-name cisco.net
Layer-3-Sw(config)#username cisco password cisco
Layer-3-Sw(config)#crypto key generate rsa
The name for the keys will be: Layer-3-Sw.cisco.net
Choose the size of the key modulus in the range of 360 to 2048 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take
a few minutes.

How many bits in the modulus [512]: 1024
* Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

Layer-3-Sw(config)#line vty 0 15
*Mar 1 1:29:5.181: %SSH-5-ENABLED: SSH 1.99 has been enabled
Layer-3-Sw(config-line)#login local
Layer-3-Sw(config-line)#transport input ssh
Layer-3-Sw(config-line)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#no ip domain-lookup
Layer-3-Sw(config)#enable password cisco
Layer-3-Sw(config)#service password-encryption
Layer-3-Sw(config)#
Layer-3-Sw(config)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config)#

```

Ctrl+F6 to exit CLI focus

FLOOR-4-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```

Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#hostname Layer-3-Sw
Layer-3-Sw(config)#banner motd #This is Layer-3-Sw#
Layer-3-Sw(config)#
Layer-3-Sw(config)#line console 0
Layer-3-Sw(config-line)#password cisco
Layer-3-Sw(config-line)#login
Layer-3-Sw(config-line)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#ip domain-name cisco.net
Layer-3-Sw(config)#username cisco password cisco
Layer-3-Sw(config)#crypto key generate rsa
The name for the keys will be: Layer-3-Sw.cisco.net
Choose the size of the key modulus in the range of 360 to 2048 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take
a few minutes.

How many bits in the modulus [512]: 1024
* Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

Layer-3-Sw(config)#line vty 0 15
*Mar 1 1:29:23.627: %SSH-5-ENABLED: SSH 1.99 has been enabled
Layer-3-Sw(config-line)#login local
Layer-3-Sw(config-line)#transport input ssh
Layer-3-Sw(config-line)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#no ip domain-lookup
Layer-3-Sw(config)#enable password cisco
Layer-3-Sw(config)#service password-encryption
Layer-3-Sw(config)#
Layer-3-Sw(config)#
Layer-3-Sw(config)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config)#

```

Ctrl+F6 to exit CLI focus

Distribution layer configuration is done.

- Core Layer Configuration:

The screenshot shows a window titled "FLOOR-1-ROUTER" with tabs for "Physical", "Config", "CLI" (which is selected), and "Attributes". The main area is titled "IOS Command Line Interface".

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#hostname Core-LayerR
Core-LayerR(config)#banner motd #This is Core-LayerR#
Core-LayerR(config)#
Core-LayerR(config)#line console 0
Core-LayerR(config-line)#password cisco
Core-LayerR(config-line)#login
Core-LayerR(config-line)#exit
Core-LayerR(config)#
Core-LayerR(config)#ip domain-name cisco.net
Core-LayerR(config)#username cisco password cisco
Core-LayerR(config)#crypto key generate rsa
The name for the keys will be: Core-LayerR.cisco.net
Choose the size of the key modulus in the range of 360 to 2048 for
your
    General Purpose Keys. Choosing a key modulus greater than 512 may
take
    a few minutes.

How many bits in the modulus [512]: 1024
* Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

Core-LayerR(config)#line vty 0 15
*Mar 1 1:32:28.332: *SSH-5-ENABLED: SSH 1.99 has been enabled
Core-LayerR(config-line)#login local
Core-LayerR(config-line)#transport input ssh
Core-LayerR(config-line)#exit
Core-LayerR(config)#
Core-LayerR(config)#no ip domain-lookup
Core-LayerR(config)#enable password cisco
Core-LayerR(config)#service password-encryption
Core-LayerR(config)#
Core-LayerR(config)#
Core-LayerR(config)#do wr
Building configuration...
[OK]
```

At the bottom left, it says "Ctrl+F6 to exit CLI focus". On the right, there are "Copy" and "Paste" buttons. At the very bottom left is a "Top" button.

FLOOR-2-ROUTER

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#hostname Core-LayerR
Core-LayerR(config) #banner motd #This is Core-LayerR#
Core-LayerR(config) #
Core-LayerR(config)#line console 0
Core-LayerR(config-line)#password cisco
Core-LayerR(config-line)#login
Core-LayerR(config) #exit
Core-LayerR(config) #
Core-LayerR(config)#ip domain-name cisco.net
Core-LayerR(config) #username cisco password cisco
Core-LayerR(config) #crypto key generate rsa
The name for the keys will be: Core-LayerR.cisco.net
Choose the size of the key modulus in the range of 360 to 2048 for
your
    General Purpose Keys. Choosing a key modulus greater than 512 may
take
    a few minutes.

How many bits in the modulus [512]: 1024
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

Core-LayerR(config)#line vty 0 15
*Mar 1 1:33:18.232: %SSH-5-ENABLED: SSH 1.99 has been enabled
Core-LayerR(config-line)#login local
Core-LayerR(config-line)#exit
Core-LayerR(config) #
Core-LayerR(config)#no ip domain-lookup
Core-LayerR(config) #enable password cisco
Core-LayerR(config) #service password-encryption
Core-LayerR(config) #
Core-LayerR(config) #
Core-LayerR(config) #do wr
Building configuration...
[OK]
```

Ctrl+F6 to exit CLI focus Copy Paste

Top

FLOOR-3-ROUTER

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#hostname Core-LayerR
Core-LayerR(config) #banner motd #This is Core-LayerR#
Core-LayerR(config) #
Core-LayerR(config)#line console 0
Core-LayerR(config-line)#password cisco
Core-LayerR(config-line)#login
Core-LayerR(config-line)#exit
Core-LayerR(config) #
Core-LayerR(config)#ip domain-name cisco.net
Core-LayerR(config) #username cisco password cisco
Core-LayerR(config) #crypto key generate rsa
The name for the keys will be: Core-LayerR.cisco.net
Choose the size of the key modulus in the range of 360 to 2048 for
your
    General Purpose Keys. Choosing a key modulus greater than 512 may
take
    a few minutes.

How many bits in the modulus [512]: 1024
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

Core-LayerR(config)#line vty 0 15
*Mar 1 1:33:52.951: %SSH-5-ENABLED: SSH 1.99 has been enabled
Core-LayerR(config-line)#login local
Core-LayerR(config-line)#exit
Core-LayerR(config) #
Core-LayerR(config)#no ip domain-lookup
Core-LayerR(config) #enable password cisco
Core-LayerR(config) #service password-encryption
Core-LayerR(config) #
Core-LayerR(config) #
Core-LayerR(config) #do wr
Building configuration...
[OK]
```

Ctrl+F6 to exit CLI focus Copy Paste

Top

```
FLOOR-4-ROUTER
Physical Config CLI Attributes
IOS Command Line Interface

Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#hostname Core-LayerR
Core-LayerR(config)#banner motd #This is Core-LayerR#
Core-LayerR(config)#
Core-LayerR(config)#line console 0
Core-LayerR(config-line)#password cisco
Core-LayerR(config-line)#login
Core-LayerR(config-line)#exit
Core-LayerR(config)#
Core-LayerR(config)#ip domain-name cisco.net
Core-LayerR(config)#username cisco password cisco
Core-LayerR(config)#crypto key generate rsa
The name for the keys will be: Core-LayerR.cisco.net
Choose the size of the key modulus in the range of 360 to 2048 for
your
    General Purpose Keys. Choosing a key modulus greater than 512 may
take
    a few minutes.

How many bits in the modulus [512]: 1024
* Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

Core-LayerR(config)#line vty 0 15
*Mar 1 1:34:15.588: %SSH-5-ENABLED: SSH 1.99 has been enabled
Core-LayerR(config-line)#login local
Core-LayerR(config-line)#transport input ssh
Core-LayerR(config-line)#exit
Core-LayerR(config)#
Core-LayerR(config)#no ip domain-lookup
Core-LayerR(config)#enable password cisco
Core-LayerR(config)#service password-encryption
Core-LayerR(config)#
Core-LayerR(config)#
Core-LayerR(config)#do wr
Building configuration...
[OK]

Ctrl+F6 to exit CLI focus
Copy Paste
Top
```

- **VLANs assignment plus all access and trunk ports.**
- **Switchport security to all 12 switches.**

These two steps will be applied to the access layer switches.

FLOOR-1-MGT-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
This Floor1-mgt switch

User Access Verification

Password:

F1-Mgt-SW>enable
Password:
F1-Mgt-SW#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
F1-Mgt-SW(config)#int range fa0/1-2
F1-Mgt-SW(config-if-range)#switchport mode trunk

F1-Mgt-SW(config-if-range)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to up

F1-Mgt-SW(config-if-range)#exit
F1-Mgt-SW(config)#vlan 10
F1-Mgt-SW(config-vlan)#name Mgt
F1-Mgt-SW(config-vlan)#exit
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#int range fa0/3-24
F1-Mgt-SW(config-if-range)#switchport mode access
F1-Mgt-SW(config-if-range)#switchport access vlan 10
F1-Mgt-SW(config-if-range)#

Ctrl+F6 to exit CLI focus
```

Top

Copy Paste

- **Commands for configuration**

This Floor1-mgt switch

User Access Verification

Password:

F1-Mgt-SW>enable

Password:

F1-Mgt-SW#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

F1-Mgt-SW(config)#int range fa0/1-2

F1-Mgt-SW(config-if-range)#switchport mode trunk

F1-Mgt-SW(config-if-range)#

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

F1-Mgt-SW(config-if-range)#exit

F1-Mgt-SW(config)#vlan 10

F1-Mgt-SW(config-vlan)#name Mgt

F1-Mgt-SW(config-vlan)#exit

F1-Mgt-SW(config)#

F1-Mgt-SW(config)#

F1-Mgt-SW(config)#int range fa0/3-24

F1-Mgt-SW(config-if-range)#switchport mode access

F1-Mgt-SW(config-if-range)#switchport access vlan 10

F1-Mgt-SW(config-if-range)#

- Let's configure port security on fa0/3-24 :

The screenshot shows a CLI window titled "FLOOR-1-MGT-SW". The tab bar at the top has "Physical", "Config", "CLI" (which is selected), and "Attributes". The main area is labeled "IOS Command Line Interface". The command history is as follows:

```
User Access Verification  
Password:  
F1-Mgt-SW>enable  
Password:  
F1-Mgt-SW#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
F1-Mgt-SW(config)#int range fa0/1-2  
F1-Mgt-SW(config-if-range)#switchport mode trunk  
  
F1-Mgt-SW(config-if-range)#  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up  
  
F1-Mgt-SW(config-if-range)#exit  
F1-Mgt-SW(config)#vlan 10  
F1-Mgt-SW(config-vlan)#name Mgt  
F1-Mgt-SW(config-vlan)#exit  
F1-Mgt-SW(config)#  
F1-Mgt-SW(config)#  
F1-Mgt-SW(config)#int range fa0/3-24  
F1-Mgt-SW(config-if-range)#switchport mode access  
F1-Mgt-SW(config-if-range)#switchport access vlan 10  
F1-Mgt-SW(config-if-range)#  
F1-Mgt-SW(config-if-range)#  
F1-Mgt-SW(config-if-range)#switchport port-security  
F1-Mgt-SW(config-if-range)#switchport port-security maximum 2  
F1-Mgt-SW(config-if-range)#switchport port-security mac-address sticky  
F1-Mgt-SW(config-if-range)#switchport port-security violation shutdown  
F1-Mgt-SW(config-if-range)#
```

At the bottom left, it says "Ctrl+F6 to exit CLI focus". On the right, there are "Copy" and "Paste" buttons. At the very bottom left, there is a "Top" button.

```
F1-Mgt-SW(config-vlan)#name Mgt
F1-Mgt-SW(config-vlan)#exit
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#int range fa0/3-24
F1-Mgt-SW(config-if-range)#switchport mode access
F1-Mgt-SW(config-if-range)#switchport access vlan 10
F1-Mgt-SW(config-if-range)#
F1-Mgt-SW(config-if-range)#
F1-Mgt-SW(config-if-range)#switchport port-security
F1-Mgt-SW(config-if-range)#switchport port-security maximum 2
F1-Mgt-SW(config-if-range)#switchport port-security mac-address sticky
F1-Mgt-SW(config-if-range)#switchport port-security violation shutdown
F1-Mgt-SW(config-if-range)#

```

```
F1-Mgt-SW(config-vlan)#name Mgt
F1-Mgt-SW(config-vlan)#exit
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#int range fa0/3-24
F1-Mgt-SW(config-if-range)#switchport mode access
F1-Mgt-SW(config-if-range)#switchport access vlan 10
F1-Mgt-SW(config-if-range)#
F1-Mgt-SW(config-if-range)#
F1-Mgt-SW(config-if-range)#switchport port-security
F1-Mgt-SW(config-if-range)#switchport port-security maximum 2
F1-Mgt-SW(config-if-range)#switchport port-security mac-address sticky
F1-Mgt-SW(config-if-range)#switchport port-security violation shutdown
F1-Mgt-SW(config-if-range)# do wr

F1-Mgt-SW(config-if-range)# exit

F1-Mgt-SW(config-if-range)# do sh start
```

FLOOR-1-MGT-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
spanning-tree extend system-id
!
interface FastEthernet0/1
switchport mode trunk
!
interface FastEthernet0/2
switchport mode trunk
!
interface FastEthernet0/3
switchport access vlan 10
switchport mode access
switchport port-security
switchport port-security maximum 2
switchport port-security mac-address sticky
!
interface FastEthernet0/4
switchport access vlan 10
switchport mode access
switchport port-security
switchport port-security maximum 2
switchport port-security mac-address sticky
!
interface FastEthernet0/5
switchport access vlan 10
switchport mode access
switchport port-security
switchport port-security maximum 2
switchport port-security mac-address sticky
!
interface FastEthernet0/6
```

Ctrl+F6 to exit CLI focus

Top

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FLOOR-1-MGT-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
interface FastEthernet0/6
switchport access vlan 10
switchport mode access
switchport port-security
switchport port-security maximum 2
switchport port-security mac-address sticky
!
interface FastEthernet0/7
switchport access vlan 10
switchport mode access
switchport port-security
switchport port-security maximum 2
switchport port-security mac-address sticky
!
interface FastEthernet0/8
switchport access vlan 10
switchport mode access
switchport port-security
switchport port-security maximum 2
switchport port-security mac-address sticky
!
interface FastEthernet0/9
switchport access vlan 10
switchport mode access
switchport port-security
switchport port-security maximum 2
switchport port-security mac-address sticky
!
interface FastEthernet0/10
switchport access vlan 10
```

Ctrl+F6 to exit CLI focus

Top

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FLOOR-1-MGT-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
!
interface GigabitEthernet0/2
!
interface Vlan1
no ip address
shutdown
!
banner motd ^CThis Floor1-mgt switch^C
!
!
line con 0
password 7 0822455DOA16
login
!
line vty 0 4
password 7 0822455DOA16
login
line vty 5 15
password 7 0822455DOA16
login
!
!
end

F1-Mgt-SW(config)#
F1-Mgt-SW(config)#

```

Ctrl+F6 to exit CLI focus

Top

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FLOOR-1-MGT-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#
F1-Mgt-SW(config)#do sh port-security
Secure Port MaxSecureAddr CurrentAddr SecurityViolation Security Action
(Count) (Count) (Count)
-----
Fa0/3 2 0 0 Shutdown
Fa0/4 2 0 0 Shutdown
Fa0/5 2 0 0 Shutdown
Fa0/6 2 0 0 Shutdown
Fa0/7 2 0 0 Shutdown
Fa0/8 2 0 0 Shutdown
Fa0/9 2 0 0 Shutdown
Fa0/10 2 0 0 Shutdown
Fa0/11 2 0 0 Shutdown
Fa0/12 2 0 0 Shutdown
Fa0/13 2 0 0 Shutdown
Fa0/14 2 0 0 Shutdown
Fa0/15 2 0 0 Shutdown
Fa0/16 2 0 0 Shutdown
Fa0/17 2 0 0 Shutdown
Fa0/18 2 0 0 Shutdown
Fa0/19 2 0 0 Shutdown
Fa0/20 2 0 0 Shutdown
Fa0/21 2 0 0 Shutdown
Fa0/22 2 0 0 Shutdown
Fa0/23 2 0 0 Shutdown
Fa0/24 2 0 0 Shutdown
-----
F1-Mgt-SW(config)#

```

Ctrl+F6 to exit CLI focus

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Top

FLOOR-1-RSC-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
This is Layer-2-Sw
User Access Verification
Password:
Layer-2-Sw>enable
Password:
Layer-2-Sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Layer-2-Sw(config)#
Layer-2-Sw(config)#int range fa0/1-2
Layer-2-Sw(config-if-range)#switchport mode trunk

Layer-2-Sw(config-if-range)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config-if-range)#int range fa0/3-24
Layer-2-Sw(config-if-range)#switchport mode access
Layer-2-Sw(config-if-range)#switchport access vlan 20
% Access VLAN does not exist. Creating VLAN 20
Layer-2-Sw(config-if-range)#switchport port-security
Layer-2-Sw(config-if-range)#switchport port-security maximum 2
Layer-2-Sw(config-if-range)#switchport port-security mac-address
sticky
Layer-2-Sw(config-if-range)#switchport port-security violation
shutdown
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2
changed state to up

Ctrl+F6 to exit CLI focus
```

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FLOOR-1-RSC-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to up

Layer-2-Sw(config-if-range)#do sh port-security
Secure Port MaxSecureAddr CurrentAddr SecurityViolation Security
Action
(Count) (Count) (Count)
-----
Fa0/3 2 0 0 Shutdown
Fa0/4 2 0 0 Shutdown
Fa0/5 2 0 0 Shutdown
Fa0/6 2 0 0 Shutdown
Fa0/7 2 0 0 Shutdown
Fa0/8 2 0 0 Shutdown
Fa0/9 2 0 0 Shutdown
Fa0/10 2 0 0 Shutdown
Fa0/11 2 0 0 Shutdown
Fa0/12 2 0 0 Shutdown
Fa0/13 2 0 0 Shutdown
Fa0/14 2 0 0 Shutdown
Fa0/15 2 0 0 Shutdown
Fa0/16 2 0 0 Shutdown
Fa0/17 2 0 0 Shutdown
Fa0/18 2 0 0 Shutdown
Fa0/19 2 0 0 Shutdown
Fa0/20 2 0 0 Shutdown
Fa0/21 2 0 0 Shutdown
Fa0/22 2 0 0 Shutdown
Fa0/23 2 0 0 Shutdown
Fa0/24 2 0 0 Shutdown
-
Layer-2-Sw(config-if-range)#do wr
Building configuration...
[OK]
Layer-2-Sw(config-if-range)#exit
Layer-2-Sw(config)#

Ctrl+F6 to exit CLI focus
```

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FLOOR-1-HR-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
This is Layer-2-Sw
User Access Verification
Password:
Layer-2-Sw>enable
Password:
Layer-2-Sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Layer-2-Sw(config)#int range fa0/1-2
Layer-2-Sw(config-if-range)#switchport mode trunk

Layer-2-Sw(config-if-range)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#int range fa0/3-24
Layer-2-Sw(config-if-range)#switchport mode access
Layer-2-Sw(config-if-range)#switchport access vlan 30
* Access VLAN does not exist. Creating vlan 30
Layer-2-Sw(config-if-range)#switchport port-security
Layer-2-Sw(config-if-range)#switchport port-security maximum 2
Layer-2-Sw(config-if-range)#switchport port-security mac-address
sticky
Layer-2-Sw(config-if-range)#switchport port-security violation
shutdown
*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to down

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to down

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to up

Ctrl+F6 to exit CLI focus
```

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FLOOR-2-MKT-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Password:
Layer-2-Sw>enable
Password:
Layer-2-Sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Layer-2-Sw(config)#int range fa0/1-2
Layer-2-Sw(config-if-range)#switchport mode trunk

Layer-2-Sw(config-if-range)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#int range fa0/3-24
Layer-2-Sw(config-if-range)#switchport mode access
Layer-2-Sw(config-if-range)#switchport access vlan 40
* Access VLAN does not exist. Creating vlan 40
Layer-2-Sw(config-if-range)#switchport port-security
Layer-2-Sw(config-if-range)#switchport port-security maximum 2
Layer-2-Sw(config-if-range)#switchport port-security mac-address
sticky
Layer-2-Sw(config-if-range)#switchport port-security violation
shutdown
*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to down

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to down

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to up

Layer-2-Sw(config-if-range)#do wr
Building configuration...
[OK]
Layer-2-Sw(config-if-range)#

Ctrl+F6 to exit CLI focus
```

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FLOOR-2-ACC-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Password:  
Layer-2-Sw>enable  
Password:  
Layer-2-Sw#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Layer-2-Sw(config)#int range fa0/1-2  
Layer-2-Sw(config-if-range)#switchport mode trunk  
  
Layer-2-Sw(config-if-range)#exit  
Layer-2-Sw(config)#  
Layer-2-Sw(config)#int range fa0/3-24  
Layer-2-Sw(config-if-range)#switchport mode access  
Layer-2-Sw(config-if-range)#switchport access vlan 50  
% Access VLAN does not exist. Creating vlan 50  
Layer-2-Sw(config-if-range)#switchport port-security  
Layer-2-Sw(config-if-range)#switchport port-security maximum 2  
Layer-2-Sw(config-if-range)#switchport port-security mac-address sticky  
Layer-2-Sw(config-if-range)#switchport port-security violation shutdown  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up  
Layer-2-Sw(config-if-range)#do wr  
Building configuration...  
[OK]  
Layer-2-Sw(config-if-range) #
```

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FLOOR-2-FINANCE-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Password:  
Layer-2-Sw>enable  
Password:  
Layer-2-Sw#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Layer-2-Sw(config)#int range fa0/1-2  
Layer-2-Sw(config-if-range)#switchport mode trunk  
  
Layer-2-Sw(config-if-range)#exit  
Layer-2-Sw(config)#  
Layer-2-Sw(config)#int range fa0/3-24  
Layer-2-Sw(config-if-range)#switchport mode access  
Layer-2-Sw(config-if-range)#switchport access vlan 60  
% Access VLAN does not exist. Creating vlan 60  
Layer-2-Sw(config-if-range)#switchport port-security  
Layer-2-Sw(config-if-range)#switchport port-security maximum 2  
Layer-2-Sw(config-if-range)#switchport port-security mac-address sticky  
Layer-2-Sw(config-if-range)#switchport port-security violation shutdown  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down  
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up  
Layer-2-Sw(config-if-range)#do wr  
Building configuration...  
[OK]  
Layer-2-Sw(config-if-range) #
```

Ctrl+F6 to exit CLI focus **Copy** **Paste**

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FLOOR-3-LOG-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
This is Layer-2-Sw

User Access Verification

Password:

Layer-2-Sw>enable
Password:
Layer-2-Sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Layer-2-Sw(config)#int range fa0/1-2
Layer-2-Sw(config-if-range)#switchport mode trunk

Layer-2-Sw(config-if-range)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#int range fa0/3-24
Layer-2-Sw(config-if-range)#switchport mode access
Layer-2-Sw(config-if-range)#switchport access vlan 70
% Access VLAN does not exist. Creating vlan 70
Layer-2-Sw(config-if-range)#switchport port-security
Layer-2-Sw(config-if-range)#switchport port-security maximum 2
Layer-2-Sw(config-if-range)#switchport port-security mac-address
sticky
Layer-2-Sw(config-if-range)#switchport port-security violation
shutdown
Layer-2-Sw(config-if-range)#
Layer-2-Sw(config-if-range)#do wr
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to down
```

Ctrl+F6 to exit CLI focus

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FLOOR-3-CUST-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer-2-Sw>enable
Password:
Layer-2-Sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Layer-2-Sw(config)#int range fa0/1-2
Layer-2-Sw(config-if-range)#switchport mode trunk

Layer-2-Sw(config-if-range)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#int range fa0/3-24
Layer-2-Sw(config-if-range)#switchport mode access
Layer-2-Sw(config-if-range)#switchport access vlan 80
* Access VLAN does not exist. Creating vlan 80
Layer-2-Sw(config-if-range)#switchport port-security
Layer-2-Sw(config-if-range)#switchport port-security maximum 2
Layer-2-Sw(config-if-range)#switchport port-security mac-address
sticky
Layer-2-Sw(config-if-range)#switchport port-security violation
shutdown
Layer-2-Sw(config-if-range)#
Layer-2-Sw(config-if-range)#do wr
*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to down

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to down

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to up

Building configuration...
[OK]
Layer-2-Sw(config-if-range)#[
```

Ctrl+F6 to exit CLI focus

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Top

FLOOR-3-GST-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
This is Layer-2-Sw
User Access Verification
Password:
Layer-2-Sw>enable
Password:
Layer-2-Sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Layer-2-Sw(config)#int range fa0/1-2
Layer-2-Sw(config-if-range)#switchport mode trunk

Layer-2-Sw(config-if-range)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config-if-range)#int range fa0/3-24
Layer-2-Sw(config-if-range)#switchport mode access
Layer-2-Sw(config-if-range)#switchport access vlan 90
% Access VLAN does not exist. Creating vlan 90
Layer-2-Sw(config-if-range)#switchport port-security
Layer-2-Sw(config-if-range)#switchport port-security maximum 2
Layer-2-Sw(config-if-range)#switchport port-security mac-address sticky
Layer-2-Sw(config-if-range)#switchport port-security violation shutdown
Layer-2-Sw(config-if-range)#
Layer-2-Sw(config-if-range)#do wr
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

Building configuration...
[OK]
Layer-2-Sw(config-if-range)#

Ctrl+F6 to exit CLI focus
```

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FLOOR-4-ADMIN-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Password:
Layer-2-Sw>enable
Password:
Layer-2-Sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Layer-2-Sw(config)#int range fa0/1-2
Layer-2-Sw(config-if-range)#switchport mode trunk

Layer-2-Sw(config-if-range)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config-if-range)#int range fa0/3-24
Layer-2-Sw(config-if-range)#switchport mode access
Layer-2-Sw(config-if-range)#switchport access vlan 100
% Access VLAN does not exist. Creating vlan 100
Layer-2-Sw(config-if-range)#switchport port-security
Layer-2-Sw(config-if-range)#switchport port-security maximum 2
Layer-2-Sw(config-if-range)#switchport port-security mac-address sticky
Layer-2-Sw(config-if-range)#switchport port-security violation shutdown
Layer-2-Sw(config-if-range)#
Layer-2-Sw(config-if-range)#do wr
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

Building configuration...
[OK]
Layer-2-Sw(config-if-range)#

Ctrl+F6 to exit CLI focus
```

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FLOOR-4-ICT-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
This is Layer-2-Sw

User Access Verification

Password:

Layer-2-Sw>enable
Password:
Layer-2-Sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Layer-2-Sw(config)#int range fa0/1-2
Layer-2-Sw(config-if-range)#switchport mode trunk

Layer-2-Sw(config-if-range)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#int range fa0/3-24
Layer-2-Sw(config-if-range)#switchport mode access
Layer-2-Sw(config-if-range)#switchport access vlan 110
% Access VLAN does not exist. Creating vlan 110
Layer-2-Sw(config-if-range)#switchport port-security
Layer-2-Sw(config-if-range)#switchport port-security maximum 2
Layer-2-Sw(config-if-range)#switchport port-security mac-address sticky
Layer-2-Sw(config-if-range)#switchport port-security violation shutdown
Layer-2-Sw(config-if-range)#
Layer-2-Sw(config-if-range)#do wr
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state
to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state
to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state
to up
```

Ctrl+F6 to exit CLI focus

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FLOOR-4-SVR-SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer-2-Sw>enable
Password:
Layer-2-Sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Layer-2-Sw(config)#int range fa0/1-2
Layer-2-Sw(config-if-range)#switchport mode trunk

Layer-2-Sw(config-if-range)#exit
Layer-2-Sw(config)#
Layer-2-Sw(config)#int range fa0/3-24
Layer-2-Sw(config-if-range)#switchport mode access
Layer-2-Sw(config-if-range)#switchport access vlan 120
  * Access VLAN does not exist. Creating vlan 120
Layer-2-Sw(config-if-range)#switchport port-security
Layer-2-Sw(config-if-range)#switchport port-security maximum 2
Layer-2-Sw(config-if-range)#switchport port-security mac-address
sticky
Layer-2-Sw(config-if-range)#switchport port-security violation
shutdown
Layer-2-Sw(config-if-range)#
Layer-2-Sw(config-if-range)#do wr
*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to down

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to down

*LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to up

Building configuration...
[OK]
Layer-2-Sw(config-if-range)#

Ctrl+F6 to exit CLI focus
```

Top

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- **Commands for configuration**

int range fa0/1-2

switchport mode trunk

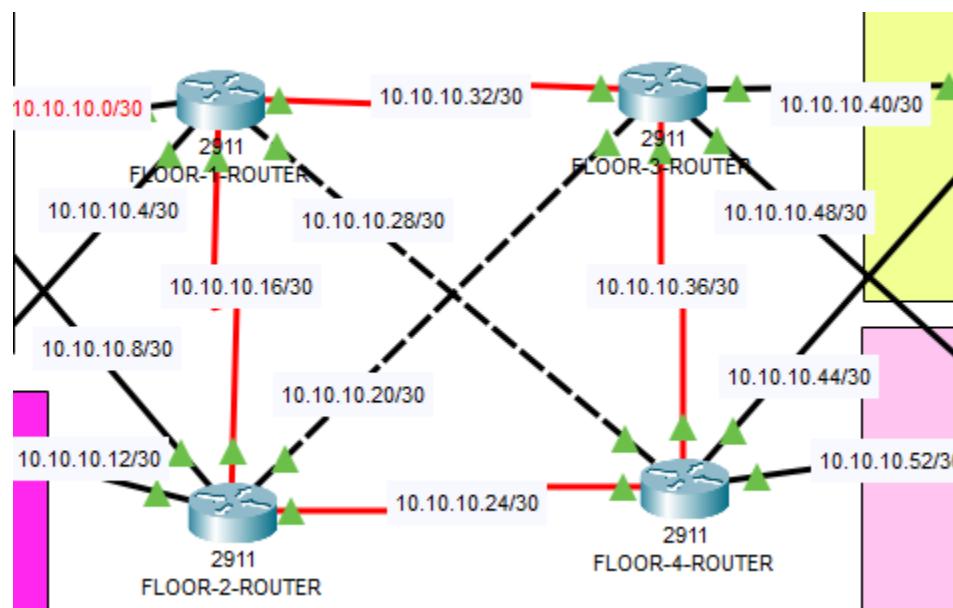
exit

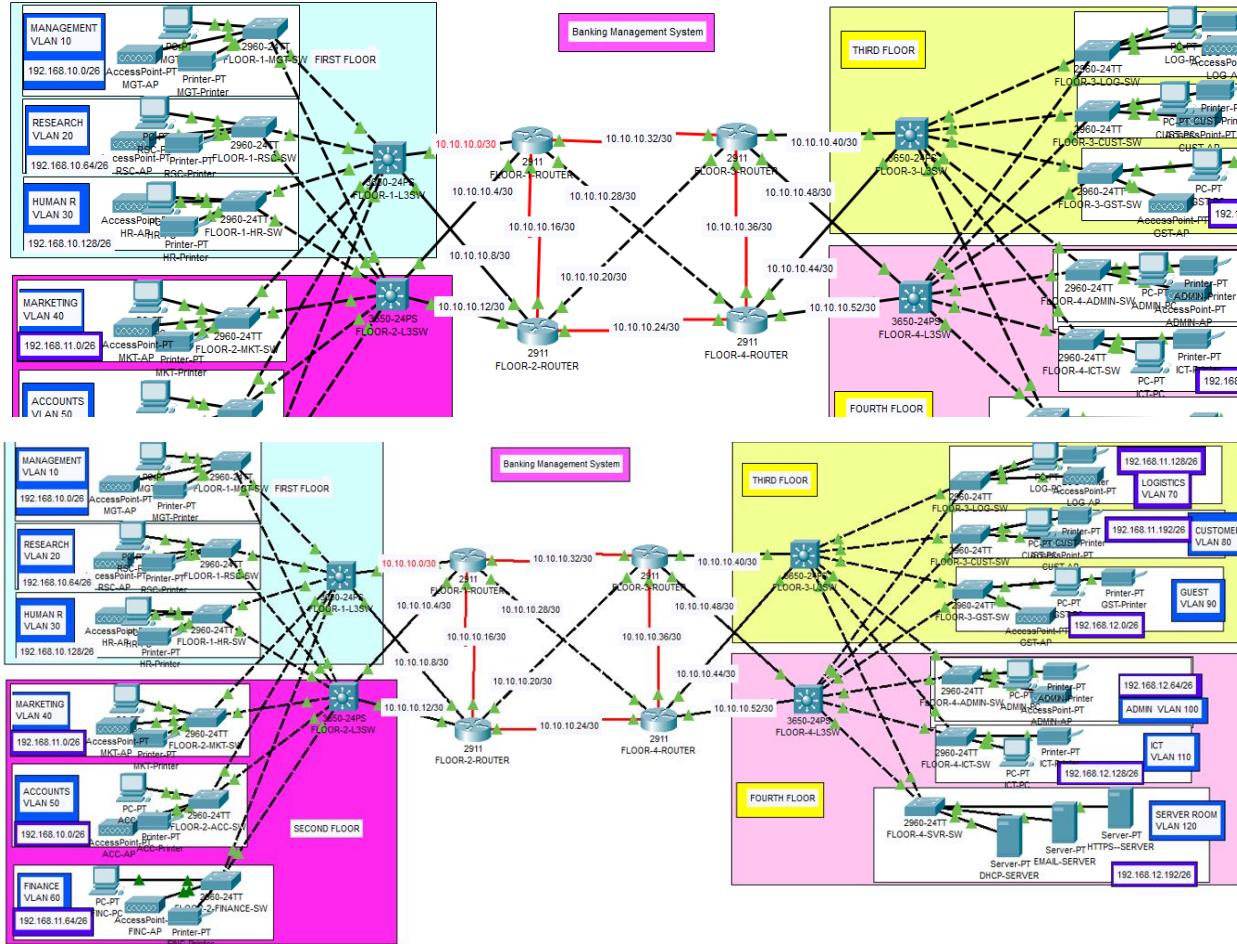
```
int range fa0/3-24  
switchport mode access  
switchport access vlan 10  
switchport port-security  
switchport port-security maximum 2  
switchport port-security mac-address sticky  
switchport port-security violation shutdown
```

do wr

- **Subnetting and IP addressing:**

IP addresses and Network addresses to all the departments.





• Commands for configuration

```
int range gig1/0/3-8
```

```
switchport mode trunk
```

```
exit
```

```
do wr
```

FLOOR-1-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
[OK]
F1-13sw(config)#interface GigabitEthernet 1/0/1
F1-13sw(config-if)#exit
F1-13sw(config)#
F1-13sw(config)#int range gig1/0/3-8
F1-13sw(config-if-range)#switchport mode trunk
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
F1-13sw(config-if-range)#exit
F1-13sw(config)#
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
F1-13sw(config)#int range gig1/0/3-8
F1-13sw(config-if-range)#switchport mode trunk
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
F1-13sw(config-if-range)#exit
```

Ctrl+F6 to exit CLI focus

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FLOOR-2-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer-3-Sw(config)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config)#interface GigabitEthernet 1/0/1
Layer-3-Sw(config-if)#int range gig1/0/3-8
Layer-3-Sw(config-if-range)#switchport mode trunk
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
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can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Layer-3-Sw(config-if-range)#exit
Layer-3-Sw(config)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config)#

```

Ctrl+F6 to exit CLI focus

Top

FLOOR-3-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer-3-Sw>enable
Password:
Layer-3-Sw#configure ter
Enter configuration commands, one per line. End with CNTL/Z.
Layer-3-Sw(config)#interface GigabitEthernet 1/0/1
Layer-3-Sw(config-if)#int range gigl/0/3-8
Layer-3-Sw(config-if-range)#switchport mode trunk
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Layer-3-Sw(config-if-range)#exit
Layer-3-Sw(config)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config)#
Ctrl+F6 to exit CLI focus
```

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FLOOR-4-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#interface GigabitEthernet1/0/3
Layer-3-Sw(config-if)#
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#interface GigabitEthernet1/0/1
Layer-3-Sw(config-if)#int range gigl/0/3-8
Layer-3-Sw(config-if-range)#switchport mode trunk
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Command rejected: An interface whose trunk encapsulation is "Auto"
can not be configured to "trunk" mode.
Layer-3-Sw(config-if-range)#exit
Layer-3-Sw(config)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config)#
Ctrl+F6 to exit CLI focus
```

Top

- Configuring IP address to these interfaces:

FLOOR-1-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
F1-13sw(config)#  
F1-13sw(config-if-range) #int range gig1/0/1-2  
F1-13sw(config-if-range) #no switchport  
F1-13sw(config-if-range) #  
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1,  
changed state to down  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1,  
changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/2,  
changed state to down  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/2,  
changed state to up  
  
F1-13sw(config-if-range) #exit  
F1-13sw(config) #
```

Ctrl+F6 to exit CLI focus

FLOOR-1-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
F1-13sw(config)#  
F1-13sw(config)#do sh start  
Using 1661 bytes  
!  
version 16.3.2  
no service timestamps log datetime msec  
no service timestamps debug datetime msec  
service password-encryption  
!  
hostname F1-13sw  
!  
!  
enable password 7 0822455D0A16  
!  
!  
!  
!  
!  
!  
no ip cef  
no ipv6 cef  
!  
!  
!  
--More--
```

Ctrl+F6 to exit CLI focus

FLOOR-1-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
!
interface GigabitEthernet1/0/1
!
interface GigabitEthernet1/0/2
!
interface GigabitEthernet1/0/3
!
interface GigabitEthernet1/0/4
!
interface GigabitEthernet1/0/5
!
interface GigabitEthernet1/0/6
!
interface GigabitEthernet1/0/7
!
interface GigabitEthernet1/0/8
!
interface GigabitEthernet1/0/9
!
interface GigabitEthernet1/0/10
!
interface GigabitEthernet1/0/11
!
interface GigabitEthernet1/0/12
--More--
```

Ctrl+F6 to exit CLI focus

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FLOOR-1-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
F1-13sw#
F1-13sw#
F1-13sw#
F1-13sw#
F1-13sw#config t
Enter configuration commands, one per line.  End with CNTL/Z.
F1-13sw(config)#int gig1/0/1
F1-13sw(config-if)#ip address 10.10.10.1 255.255.255.252
F1-13sw(config-if)#exit
F1-13sw(config)#

```

FLOOR-2-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
*LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1, changed state to down
*LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1, changed state to up
*LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/2, changed state to down
*LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/2, changed state to up

Layer-3-Sw(config-if-range)#exit
Layer-3-Sw(config)#int gigl/0/2
Layer-3-Sw(config-if)#ip address 10.10.10.5 255.255.255.252
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int gigl/0/1
Layer-3-Sw(config-if)#ip address 10.10.10.13 255.255.255.252
Layer-3-Sw(config)#exit
Layer-3-Sw(config)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config)#

Ctrl-F6 to exit CLI focus
```

FLOOR-3-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer-3-Sw(config-if-range)#  
%LINEPROTO-S-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1,  
changed state to down  
  
%LINEPROTO-S-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1,  
changed state to up  
  
%LINEPROTO-S-UPDOWN: Line protocol on Interface GigabitEthernet1/0/2,  
changed state to down  
  
%LINEPROTO-S-UPDOWN: Line protocol on Interface GigabitEthernet1/0/2,  
changed state to up  
  
Layer-3-Sw(config-if-range)#exit  
Layer-3-Sw(config)#int gig1/0/1  
Layer-3-Sw(config-if)#ip address 10.10.10.41 255.255.255.252  
Layer-3-Sw(config-if)#exit  
Layer-3-Sw(config)#int gig1/0/2  
Layer-3-Sw(config-if)#ip address 10.10.10.45 255.255.255.252  
Layer-3-Sw(config-if)#exit  
Layer-3-Sw(config)#do wr  
Building configuration...  
Compressed configuration from 7383 bytes to 3601 bytes[OK]  
[OK]  
Layer-3-Sw(config)#
```

FLOOR-1-ROUTER

Physical Config **CLI** Attributes

IOS Command Line Interface

```
This is Core-LayerR

User Access Verification

Password:

Core-LayerR>en
Password:
Core-LayerR#configure t
Enter configuration commands, one per line. End with CNTL/Z.
Core-LayerR(config)#int gig0/1
Core-LayerR(config-if)#ip address 10.10.10.2 255.255.255.252
Core-LayerR(config-if)#exit
Core-LayerR(config)#
Core-LayerR(config)#int gig0/2
Core-LayerR(config-if)#ip address 10.10.10.6 255.255.255.252
Core-LayerR(config-if)#exit
Core-LayerR(config)#int gig0/0
Core-LayerR(config-if)#ip address 10.10.10.29 255.255.255.252
Core-LayerR(config-if)#
Core-LayerR(config-if)#int se0/2/0
Core-LayerR(config-if)#ip address 10.10.10.33 255.255.255.252
Core-LayerR(config-if)#exit
Core-LayerR(config)#int se0/2/1
Core-LayerR(config-if)#ip address 10.10.10.17 255.255.255.252
Core-LayerR(config-if)#clock rate 64000
Core-LayerR(config-if)#exit
Core-LayerR(config)#int se0/2/0
Core-LayerR(config-if)#clock rate 64000
Core-LayerR(config-if)#exit
Core-LayerR(config)#do wr
Building configuration...
[OK]
Core-LayerR(config)#

```

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FLOOR-2-ROUTER

Physical Config CLI Attributes

GLOBAL

Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0
GigabitEthernet0/1
GigabitEthernet0/2
Serial0/1/0
Serial0/1/1
Serial0/2/0

GigabitEthernet0/2

Port Status On
Bandwidth 1000 Mbps 100 Mbps 10 Mbps Auto
Duplex Half Duplex Full Duplex Auto
MAC Address 00D0.BA63.CE03

IP Configuration
IP Address 10.10.10.14
Subnet Mask 255.255.255.252

Tx Ring Limit 10

Equivalent IOS Commands

```
Core-LayerR(config)#interface GigabitEthernet0/2
Core-LayerR(config-if)#ip address 10.10.10.4 255.0.0.0
Core-LayerR(config-if)#ip address 10.10.10.4 255.0.0.0
Core-LayerR(config-if)#ip address 10.10.10.14 255.0.0.0
Core-LayerR(config-if)#

```

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FLOOR-2-ROUTER

Physical Config CLI Attributes

GLOBAL

Settings
Algorithm Settings
ROUTING
Static
RIP
SWITCHING
VLAN Database
INTERFACE
GigabitEthernet0/0
GigabitEthernet0/1
GigabitEthernet0/2
Serial0/1/0
Serial0/1/1
Serial0/2/0
Serial0/2/1

Serial0/2/1

Port Status On
Duplex Full Duplex
Clock Rate 64000

IP Configuration
IP Address 10.10.10.25
Subnet Mask 255.255.255.252

Tx Ring Limit 10

Equivalent IOS Commands

```
Core-LayerR(config-if)#ip address 10.10.10.25 255.255.255.252
Core-LayerR(config-if)#ip address 10.10.10.25 255.255.255.252
Core-LayerR(config-if)#clock rate 64000
This command applies only to DCE interfaces
Core-LayerR(config-if)#

```

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FLOOR-4-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

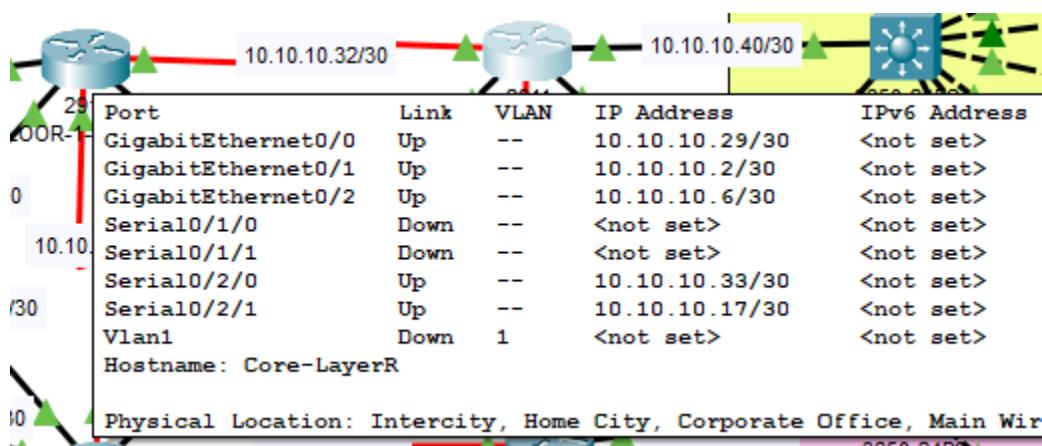
```
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/2, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet1/0/2, changed state to up

Layer-3-Sw(config-if-range)#exit
Layer-3-Sw(config)#int gig1/0/1
Layer-3-Sw(config-if)#ip address 10.10.10.49 255.255.255.252
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#int gig1/0/2
Layer-3-Sw(config-if)#ip address 10.10.10.53 255.255.255.252
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config)#
```

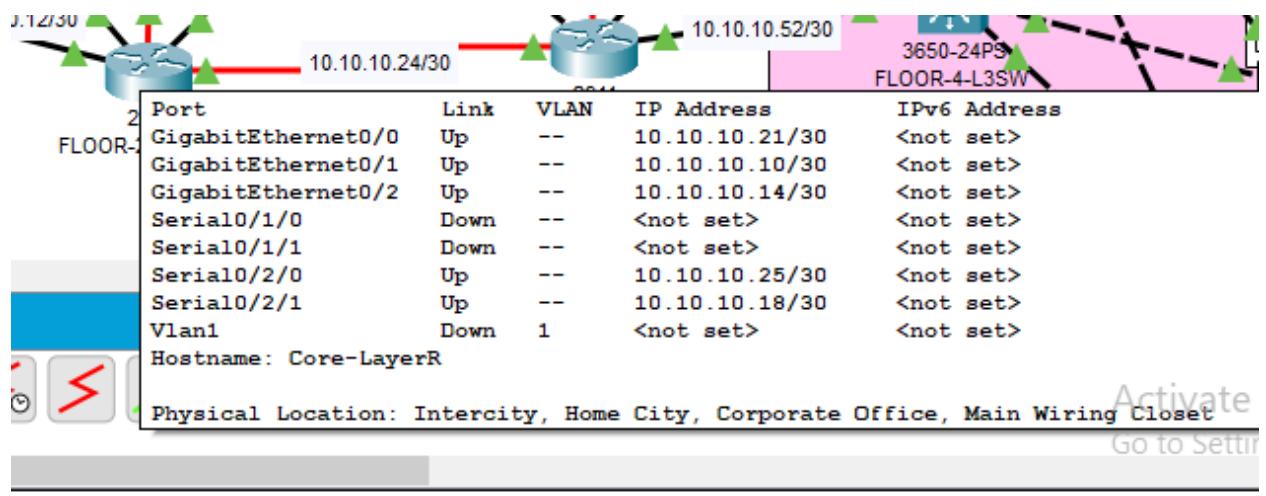
Ctrl+F6 to exit CLI focus **Copy** **Paste**

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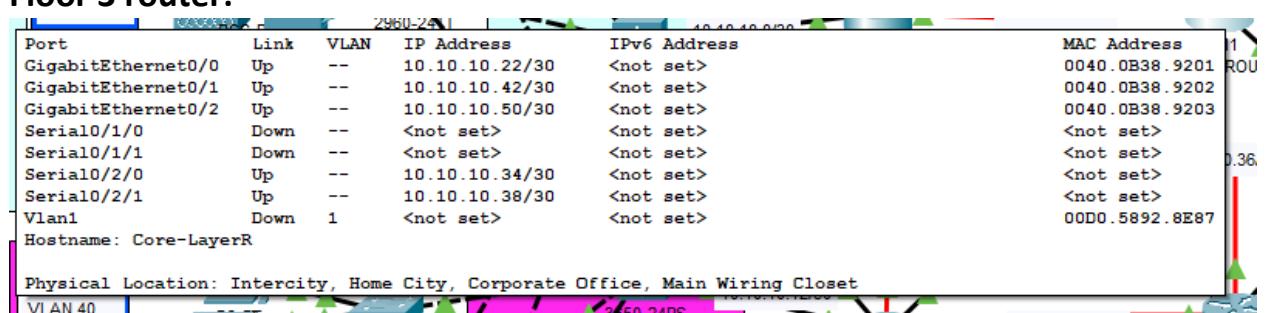
- Configured IP address to the routers.
- Floor 1 router:



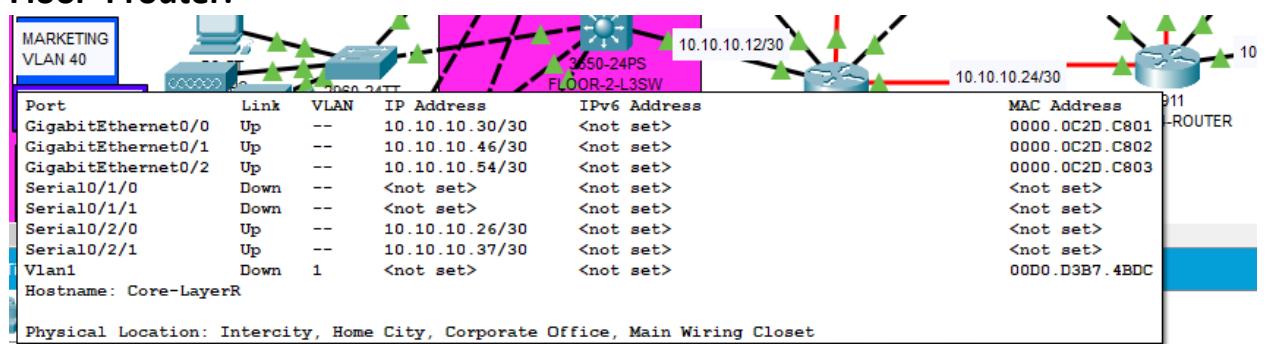
- Floor 2 router:



- Floor 3 router:



- Floor 4 router:



- OSPF on the routers and layer3 switches.
- Advertised all the routes, all the networks.

FLOOR-1-ROUTER

Physical Config **CLI** Attributes

IOS Command Line Interface

```
This is Core-LayerR
User Access Verification
Password:
Core-LayerR>en
Password:
Core-LayerR#configure t
Enter configuration commands, one per line. End with CNTL/Z.
Core-LayerR(config)#router ospf 10
Core-LayerR(config-router)#
Core-LayerR(config-router)#network 10.10.10.0 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.4 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.16 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.28 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.32 0.0.0.3 area 0
Core-LayerR(config-router)#exit
Core-LayerR(config)#
Core-LayerR(config)#
Core-LayerR(config)#do wr
Building configuration...
[OK]
Core-LayerR(config)#
Ctrl+F6 to exit CLI focus
```

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FLOOR-3-ROUTER

Physical Config **CLI** Attributes

IOS Command Line Interface

```
User Access Verification
Password:
Password:
Core-LayerR>en
Password:
Core-LayerR#configure t
Enter configuration commands, one per line. End with CNTL/Z.
Core-LayerR(config)#router ospf 10
Core-LayerR(config-router)#network 10.10.10.32 0.0.0.3 area 0
Core-LayerR(config-router)#
04:17:46: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.33 on Serial0/2/0 from LOADING to FULL, Loading Done
network 10.10.10.32 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.32 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.20 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.36 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.48 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.40 0.0.0.3 area 0
Core-LayerR(config-router)#exit
Core-LayerR(config)#do wr
Building configuration...
[OK]
Core-LayerR(config)#
Ctrl+F6 to exit CLI focus
```

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FLOOR-2-ROUTER

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Core-LayerR>en
Password:
Core-LayerR#configure t
Enter configuration commands, one per line. End with CNTL/Z.
Core-LayerR(config)#router ospf 10
Core-LayerR(config-router)#
Core-LayerR(config-router)#network 10.10.10.12 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.8 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.16 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.16 0.0.0.3 area 0
04:20:36: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.33 on Serial0/2/1 from LOADING to FULL, Loading Done
Core-LayerR(config-router)#network 10.10.10.16 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.20 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.24 0.0.0.3 area 0
04:21:06: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.50 on GigabitEthernet0/0 from LOADING to FULL, Loading Done
Core-LayerR(config-router)#network 10.10.10.24 0.0.0.3 area 0
Core-LayerR(config-router)#
Core-LayerR(config-router)#do wr
Building configuration...
[OK]
Core-LayerR(config-router)#
Ctrl+F6 to exit CLI focus
```

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FLOOR-4-ROUTER

Physical Config **CLI** Attributes

IOS Command Line Interface

```
This is Core-LayerR
User Access Verification
Password:
Core-LayerR>en
Password:
Core-LayerR#configure t
Enter configuration commands, one per line. End with CNTL/Z.
Core-LayerR(config)#router ospf 10
Core-LayerR(config-router)#network 10.10.10.24 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.24 0.0.0.3 area 0
04:22:59: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.25 on Serial0/2/0
from LOADING to FULL, Loading Done

Core-LayerR(config-router)#network 10.10.10.28 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.36 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.36 0.0.0.3 area 0
04:23:21: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.50 on Serial0/2/1
from LOADING to FULL, Loading Done

Core-LayerR(config-router)#
04:23:23: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.33 on
GigabitEthernet0/0 from LOADING to FULL, Loading Done

Core-LayerR(config-router)#network 10.10.10.44 0.0.0.3 area 0
Core-LayerR(config-router)#network 10.10.10.52 0.0.0.3 area 0
Core-LayerR(config-router)#exit
Core-LayerR(config)#do wr
Building configuration...
[OK]
Core-LayerR(config)#

Ctrl+F6 to exit CLI focus
```

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FLOOR-1-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
User Access Verification
Password:
Fl-13sw>en
Password:
Fl-13sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Fl-13sw(config)#ip routing
Fl-13sw(config)#router ospf 10
Fl-13sw(config-router)#network 10.10.10.0 0.0.0.3 area 0
Fl-13sw(config-router)#network 10.10.10.0 0.0.0.3 area 0
04:25:49: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.33 on
GigabitEthernet1/0/1 from LOADING to FULL, Loading Done

Fl-13sw(config-router)#network 10.10.10.8 0.0.0.3 area 0
Fl-13sw(config-router)#
04:26:21: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.25 on
GigabitEthernet1/0/2 from LOADING to FULL, Loading Done

Fl-13sw(config-router)#

Ctrl+F6 to exit CLI focus
```

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FLOOR-1-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
F1-13sw#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
F1-13sw(config)#ip routing
F1-13sw(config)#router ospf 10
F1-13sw(config-router)#network 10.10.10.0 0.0.0.3 area 0
F1-13sw(config-router)#network 10.10.10.0 0.0.0.3 area 0
04:25:49: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.33 on
GigabitEthernet1/0/1 from LOADING to FULL, Loading Done

F1-13sw(config-router)#network 10.10.10.8 0.0.0.3 area 0
F1-13sw(config-router)#
04:26:21: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.25 on
GigabitEthernet1/0/2 from LOADING to FULL, Loading Done

F1-13sw(config-router)#network 192.168.10.0 0.0.0.63 area 0
F1-13sw(config-router)#network 192.168.10.64 0.0.0.63 area 0
F1-13sw(config-router)#network 192.168.10.128 0.0.0.63 area 0
F1-13sw(config-router)#network 192.168.10.192 0.0.0.63 area 0
F1-13sw(config-router)#network 192.168.11.0 0.0.0.63 area 0
F1-13sw(config-router)#network 192.168.11.64 0.0.0.63 area 0
F1-13sw(config-router)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
F1-13sw(config-router)#

Ctrl+F6 to exit CLI focus
```

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FLOOR-2-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
User Access Verification

Password:
Layer-3-Sw>en
Password:
Layer-3-Sw#configure t
Enter configuration commands, one per line. End with CNTL/Z.
Layer-3-Sw(config)#ip routing
Layer-3-Sw(config)#ip routing
Layer-3-Sw(config)#router ospf 10
Layer-3-Sw(config-router)#network 10.10.10.12 0.0.0.3 area 0
Layer-3-Sw(config-router)#network 10.10.10.4 0.0.0.3 area 0
Layer-3-Sw(config-router)#
Layer-3-Sw(config-router)#network 192.168.10.0 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.10.64 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.10.128 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.10.192 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.11.0 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.11.64 0.0.0.63 area 0
Layer-3-Sw(config-router)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config-router)#

Ctrl+F6 to exit CLI focus
```

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FLOOR-4-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
User Access Verification

Password:

Layer-3-Sw>en
Password:
Layer-3-Sw#configure t
Enter configuration commands, one per line. End with CNTL/Z.
Layer-3-Sw(config)#ip routing
Layer-3-Sw(config-router)#router ospf 10
Layer-3-Sw(config-router)#network 10.10.10.52 0.0.0.3 area 0
Layer-3-Sw(config-router)#network 10.10.10.48 0.0.0.3 area 0
Layer-3-Sw(config-router)#
Layer-3-Sw(config-router)#
Layer-3-Sw(config-router)#network 192.168.11.128 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.11.192 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.12.0 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.12.64 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.12.128 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.12.192 0.0.0.63 area 0
Layer-3-Sw(config-router)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config-router)#

Ctrl+F6 to exit CLI focus
```

Top

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FLOOR-3-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
User Access Verification

Password:

Layer-3-Sw>en
Password:
Layer-3-Sw#configure t
Enter configuration commands, one per line. End with CNTL/Z.
Layer-3-Sw(config)#ip routing
Layer-3-Sw(config-router)#router ospf 10
Layer-3-Sw(config-router)#network 10.10.10.42 0.0.0.3 area 0
Layer-3-Sw(config-router)#network 10.10.10.40 0.0.0.3 area 0
Layer-3-Sw(config-router)#
Layer-3-Sw(config-router)#
Layer-3-Sw(config-router)#network 192.168.11.128 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.11.192 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.12.0 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.12.64 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.12.128 0.0.0.63 area 0
Layer-3-Sw(config-router)#network 192.168.12.192 0.0.0.63 area 0
Layer-3-Sw(config-router)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config-router)#

Ctrl+F6 to exit CLI focus
```

Top

Copy Paste

```

Layer-3-Sw(config-router)#do wr
Building configuration...
Compressed configuration from 7383 bytes to 3601 bytes[OK]
[OK]
Layer-3-Sw(config-router)#
04:39:08: %OSPF-5-ADJCHG: Process 10, Nbr 10.10.10.50 on
GigabitEthernet1/0/1 from LOADING to FULL, Loading Done

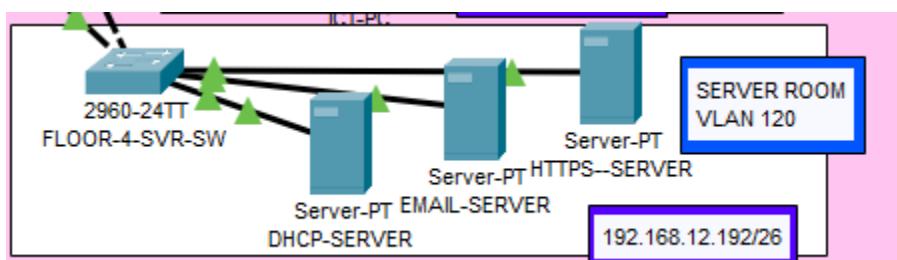
```

Ctrl+F6 to exit CLI focus

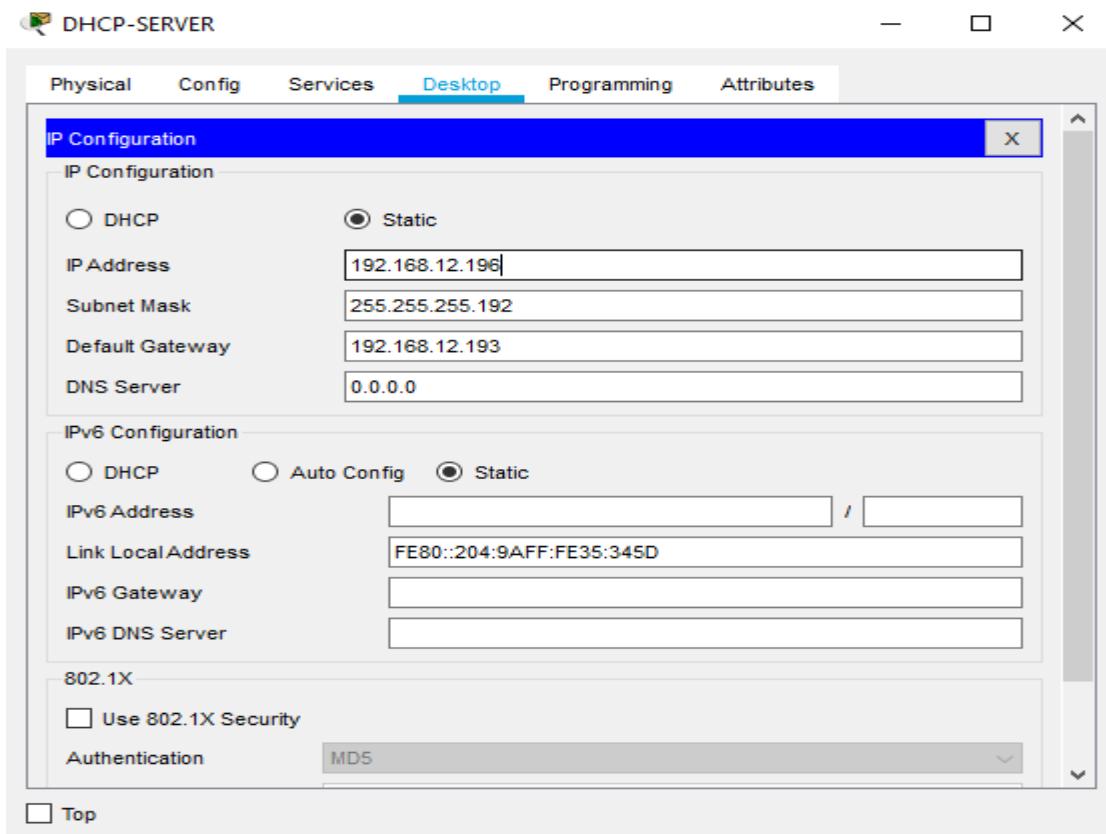
Copy

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- **Step# 06 Static IP address to server Room Devices.**



- **DHCP SERVER**



EMAIL-SERVER

Physical Config Services Desktop Programming Attributes

IP Configuration

IP Configuration

DHCP Static

IP Address: 192.168.12.197

Subnet Mask: 255.255.255.192

Default Gateway: 192.168.12.193

DNS Server: 0.0.0.0

IPv6 Configuration

DHCP Auto Config Static

IPv6 Address: [] / []

Link Local Address: FE80::200:CFF:FE85:76EB

IPv6 Gateway: []

IPv6 DNS Server: []

802.1X

Use 802.1X Security

Authentication: MDS

Top

HTTPS--SERVER

Physical Config Services Desktop Programming Attributes

IP Configuration

IP Configuration

DHCP Static

IP Address: 192.168.12.198

Subnet Mask: 255.255.255.192

Default Gateway: 192.168.12.193

DNS Server: 0.0.0.0

IPv6 Configuration

DHCP Auto Config Static

IPv6 Address: [] / []

Link Local Address: FE80::260:70FF:FE54:B9B4

IPv6 Gateway: []

IPv6 DNS Server: []

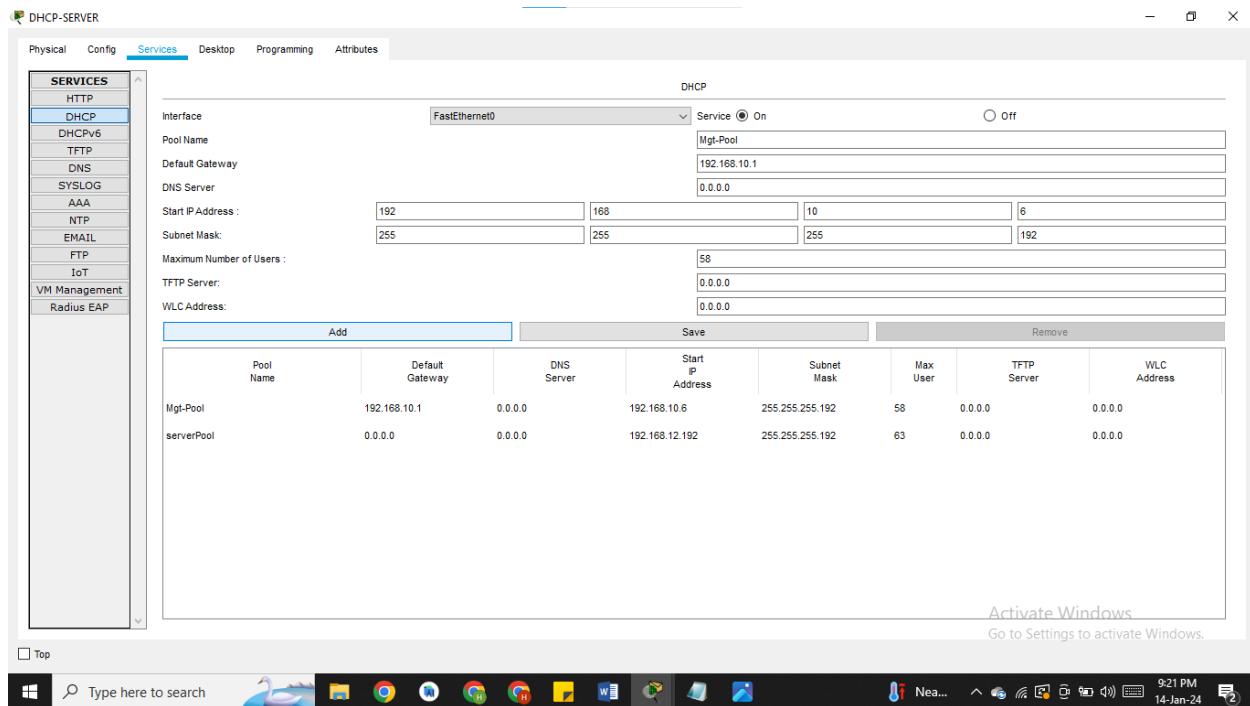
802.1X

Use 802.1X Security

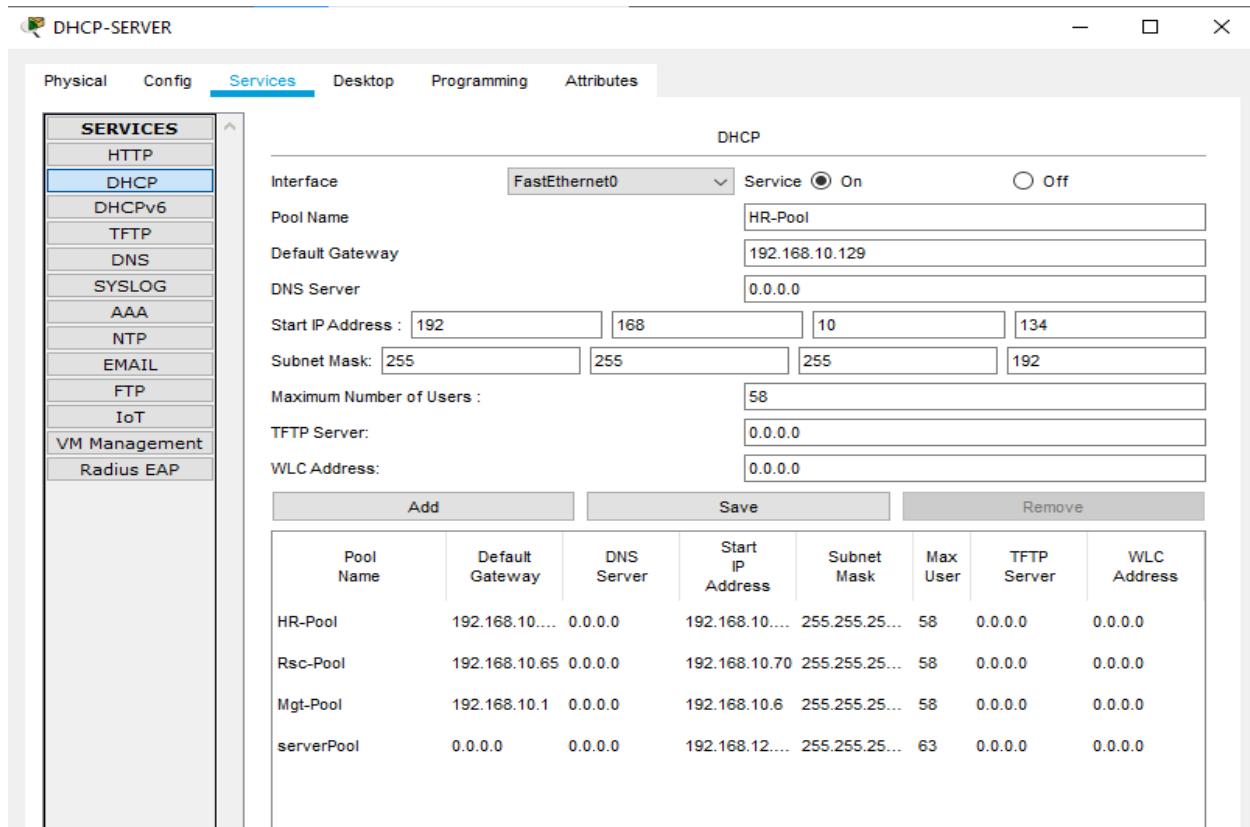
Authentication: MDS

Top

- DHCP server device configuration.



- First Floor Departments Pools:



- Second Floor Departments Pools:

The screenshot shows the 'DHCP-SERVER' application window with the 'Services' tab selected. On the left, a sidebar lists various services: HTTP, DHCP, DHCPv6, TFTP, DNS, SYSLOG, AAA, NTP, EMAIL, FTP, IoT, VM Management, and Radius EAP. The 'DHCP' service is currently selected. The main panel displays the 'DHCP' configuration settings:

- Interface:** FastEthernet0
- Service:** On (radio button selected)
- Pool Name:** ACC-Pool
- Default Gateway:** 192.168.11.1
- DNS Server:** 0.0.0.0
- Start IP Address :** 192.168.11.5
- Subnet Mask:** 255.255.255.192
- Maximum Number of Users :** 59
- TFTP Server:** 0.0.0.0
- WLC Address:** 0.0.0.0

Below these settings is a table listing existing DHCP pools:

| Pool Name | Default gateway | DNS Server | Start IP Address | Subnet Mask | Max User | TFTP Server | WLC Address |
|-----------|-----------------|------------|------------------|-----------------|----------|-------------|-------------|
| ACC-Pool | 192.168.11.1 | 0.0.0.0 | 192.168.11.5 | 255.255.255.192 | 59 | 0.0.0.0 | 0.0.0.0 |
| FIN-Pool | 192.168.11.1 | 0.0.0.0 | 192.168.11.5 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| MKT-Pool | 192.168.11.1 | 0.0.0.0 | 192.168.11.5 | 255.255.255.192 | 59 | 0.0.0.0 | 0.0.0.0 |
| HR-Pool | 192.168.11.1 | 0.0.0.0 | 192.168.11.5 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |

Buttons for 'Add', 'Save', and 'Remove' are located at the bottom of the table.

- Third Floor Departments Pool:

The screenshot shows the 'DHCP SERVER' application window with the 'Services' tab selected. The sidebar lists the same services as the previous screenshot. The 'DHCP' service is selected. The main panel displays the 'DHCP' configuration settings:

- Interface:** FastEthernet0
- Service:** On (radio button selected)
- Pool Name:** GUEST-Pool
- Default Gateway:** 192.168.12.1
- DNS Server:** 0.0.0.0
- Start IP Address :** 192.168.12.5
- Subnet Mask:** 255.255.255.192
- Maximum Number of Users :** 58
- TFTP Server:** 0.0.0.0
- WLC Address:** 0.0.0.0

Below these settings is a table listing existing DHCP pools:

| Pool Name | Default gateway | DNS Server | Start IP Address | Subnet Mask | Max User | TFTP Server | WLC Address |
|------------|-----------------|------------|------------------|-----------------|----------|-------------|-------------|
| GUEST-Pool | 192.168.12.1 | 0.0.0.0 | 192.168.12.5 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| CUST-Pool | 192.168.12.1 | 0.0.0.0 | 192.168.12.5 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| LOG-Pool | 192.168.12.1 | 0.0.0.0 | 192.168.12.5 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |

Buttons for 'Add', 'Save', and 'Remove' are located at the bottom of the table.

- Fourth Floor Departments Pools:

DHCP-SERVER

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: ICT-Pool

Default Gateway: 192.168.12.129

DNS Server: 0.0.0.0

Start IP Address: 192 168 12 134

Subnet Mask: 255 255 255 192

Maximum Number of Users: 58

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 |
|------------|-----------------|------------|------------------|-----------------|----------|-------------|-------------|
| ICT-Pool | 192.168.12.129 | 0.0.0.0 | 192.168.12.134 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| ADMIN-Pool | 192.168.12.65 | 0.0.0.0 | 192.168.12.70 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |

DHCP-SERVER

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: ICT-Pool

Default Gateway: 192.168.12.129

DNS Server: 0.0.0.0

Start IP Address: 192 168 12 134

Subnet Mask: 255 255 255 192

Maximum Number of Users: 58

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 |
|------------|-----------------|------------|------------------|-----------------|----------|-------------|-------------|
| ICT-Pool | 192.168.12.129 | 0.0.0.0 | 192.168.12.134 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| ADMIN-Pool | 192.168.12.65 | 0.0.0.0 | 192.168.12.70 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| GUEST-Pool | 192.168.12.1 | 0.0.0.0 | 192.168.12.5 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| CUST-Pool | 192.168.11.193 | 0.0.0.0 | 192.168.11.197 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| LOG-Pool | 192.168.11.129 | 0.0.0.0 | 192.168.11.134 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| ACC-Pool | 192.168.11.1 | 0.0.0.0 | 192.168.11.5 | 255.255.255.192 | 59 | 0.0.0.0 | 0.0.0.0 |
| FIN-Pool | 192.168.11.65 | 0.0.0.0 | 192.168.11.70 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| MKT-Pool | 192.168.10.193 | 0.0.0.0 | 192.168.10.197 | 255.255.255.192 | 59 | 0.0.0.0 | 0.0.0.0 |

Activate Windows Go to Settings to activate Windows.

Type here to search

15°C 9:35 PM 14-Jan-24

- Inter-VLAN routing on the layer 3 switches plus ip dhcp helper addresses.
- Creating VLANS on 13 switches.

FLOOR-1-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Enter configuration commands, one per line. End with CNTL/Z.
F1-13sw(config)#vlan 10
F1-13sw(config-vlan)#vlan 10
F1-13sw(config-vlan)#vlan 20
F1-13sw(config-vlan)#vlan 30
F1-13sw(config-vlan)#vlan 40
F1-13sw(config-vlan)#vlan 50
F1-13sw(config-vlan)#vlan 60
F1-13sw(config-vlan)#exit
F1-13sw(config)#do sh vlan

VLAN Name          Status      Ports
-----            -----
1    default        active      Gig1/0/9, Gig1/0/10,
                           Gig1/0/11, Gig1/0/12
                           Gig1/0/13, Gig1/0/14,
                           Gig1/0/15, Gig1/0/16
                           Gig1/0/17, Gig1/0/18,
                           Gig1/0/19, Gig1/0/20
                           Gig1/0/21, Gig1/0/22,
                           Gig1/0/23, Gig1/0/24
                           Gig1/1/1, Gig1/1/2,
                           Gig1/1/3, Gig1/1/4
10   VLAN0010       active
20   VLAN0020       active
30   VLAN0030       active
40   VLAN0040       active
50   VLAN0050       active
60   VLAN0060       active
1002 fddi-default  active
1003 token-ring-default  active
1004 fddinet-default  active
1005 trnet-default  active

VLAN Type      SAID      MTU      Parent RingNo BridgeNo Stp      BrdgMode
Trans1 Trans2
```

Ctrl+F6 to exit CLI focus

Top

FLOOR-1-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
F1-13sw(config)#int vlan 10
F1-13sw(config-if)#no shutdown
F1-13sw(config-if)#ip address 192.168.10.1 255.255.255.192
F1-13sw(config-if)#ip helper-address 192.168.12.196
F1-13sw(config-if)#exit
F1-13sw(config)#
F1-13sw(config)#int vlan 20
F1-13sw(config-if)#no shutdown
F1-13sw(config-if)#ip address 192.168.10.65 255.255.255.192
F1-13sw(config-if)#ip helper-address 192.168.12.196
F1-13sw(config-if)#exit
F1-13sw(config)#
F1-13sw(config)#int vlan 30
F1-13sw(config-if)#no shutdown
F1-13sw(config-if)#ip address 192.168.10.193 255.255.255.192
F1-13sw(config-if)#ip helper-address 192.168.12.196
F1-13sw(config-if)#exit
F1-13sw(config)#
F1-13sw(config)#int vlan 40
F1-13sw(config-if)#no shutdown
F1-13sw(config-if)#ip address 192.168.10.1 255.255.255.192
% 192.168.10.0 overlaps with Vlan10
F1-13sw(config-if)#ip helper-address 192.168.12.196
F1-13sw(config-if)#exit
F1-13sw(config)#
F1-13sw(config)#int vlan 50
F1-13sw(config-if)#no shutdown
F1-13sw(config-if)#ip address 192.168.11.1 255.255.255.192
F1-13sw(config-if)#ip helper-address 192.168.12.196
F1-13sw(config-if)#exit
F1-13sw(config)#
F1-13sw(config)#int vlan 60
F1-13sw(config-if)#no shutdown
F1-13sw(config-if)#ip address 192.168.11.65 255.255.255.192
F1-13sw(config-if)#ip helper-address 192.168.12.196
F1-13sw(config-if)#exit
F1-13sw(config)#
F1-13sw(config)#do wr
```

Ctrl+F6 to exit CLI focus

Copy

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FLOOR-2-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer-3-Sw(config)#int vlan 10
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.10.1 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 20
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.10.65 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 30
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.10.193 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 40
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.10.1 255.255.255.192
% 192.168.10.0 overlaps with Vlan10
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 50
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.11.1 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 60
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.11.65 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#do wr
```

Ctrl+F6 to exit CLI focus

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Top

 FLOOR-4-L3SW

- □ ×

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer-3-Sw(config)#interface GigabitEthernet1/0/2
Layer-3-Sw(config-if)#interface GigabitEthernet1/0/2
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#vlan 70
Layer-3-Sw(config-vlan)#vlan 80
Layer-3-Sw(config-vlan)#vlan 90
Layer-3-Sw(config-vlan)#vlan 100
Layer-3-Sw(config-vlan)#vlan 110
Layer-3-Sw(config-vlan)#vlan 120
Layer-3-Sw(config-vlan)#
Layer-3-Sw(config-vlan)#int vlan 70
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.11.129 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 80
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.11.193 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 90
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.12.1 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 100
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.12.65 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 110
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.12.129 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
```

Ctrl+F6 to exit CLI focus

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 Top

FLOOR-4-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer3-Sw(config)*
Layer3-Sw(config)#int vlan 90
Layer3-Sw(config-if)#no shutdown
Layer3-Sw(config-if)#ip address 192.168.12.1 255.255.255.192
Layer3-Sw(config-if)#ip helper-address 192.168.12.196
Layer3-Sw(config-if)#exit
Layer3-Sw(config)*
Layer3-Sw(config)#int vlan 100
Layer3-Sw(config-if)#no shutdown
Layer3-Sw(config-if)#ip address 192.168.12.65 255.255.255.192
Layer3-Sw(config-if)#ip helper-address 192.168.12.196
Layer3-Sw(config-if)#exit
Layer3-Sw(config)*
Layer3-Sw(config)#int vlan 110
Layer3-Sw(config-if)#no shutdown
Layer3-Sw(config-if)#ip address 192.168.12.129 255.255.255.192
Layer3-Sw(config-if)#ip helper-address 192.168.12.196
Layer3-Sw(config-if)#exit
Layer3-Sw(config)*
Layer3-Sw(config)#int vlan 120
Layer3-Sw(config-if)#no shutdown
Layer3-Sw(config-if)#ip address 192.168.12.193 255.255.255.192
Layer3-Sw(config-if)#exit
Layer3-Sw(config)*
Layer3-Sw(config)#do wr
%LINK-5-CHANGED: Interface Vlan70, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan70, changed state
to up

%LINK-5-CHANGED: Interface Vlan80, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan80, changed state
to up

%LINK-5-CHANGED: Interface Vlan90, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan90, changed state
to up
```

Ctrl+F6 to exit CLI focus

Top

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FLOOR-3-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#interface GigabitEthernet1/0/1
Layer-3-Sw(config-if)#
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#vlan 70
Layer-3-Sw(config-vlan)#vlan 80
Layer-3-Sw(config-vlan)#vlan 90
Layer-3-Sw(config-vlan)#vlan 100
Layer-3-Sw(config-vlan)#vlan 110
Layer-3-Sw(config-vlan)#vlan 120
Layer-3-Sw(config-vlan)#
Layer-3-Sw(config-vlan)#int vlan 70
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.11.129 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 80
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.11.193 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 90
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.12.1 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 100
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.12.65 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 110
Layer-3-Sw(config-if)#no shutdown
```

Ctrl+F6 to exit CLI focus

Top

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FLOOR-3-L3SW

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 90
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.12.1 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 100
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.12.65 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 110
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.12.129 255.255.255.192
Layer-3-Sw(config-if)#ip helper-address 192.168.12.196
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#int vlan 120
Layer-3-Sw(config-if)#no shutdown
Layer-3-Sw(config-if)#ip address 192.168.12.193 255.255.255.192
Layer-3-Sw(config-if)#exit
Layer-3-Sw(config)#
Layer-3-Sw(config)#do wr
%LINK-5-CHANGED: Interface Vlan70, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan70, changed state
to up

%LINK-5-CHANGED: Interface Vlan80, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan80, changed state
to up

%LINK-5-CHANGED: Interface Vlan90, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan90, changed state
```

Ctrl+F6 to exit CLI focus

Top

- Verifying and testing configurations.

ICT-PC

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

DHCP Static DHCP request successful.

IP Address: 192.168.12.135
Subnet Mask: 255.255.255.192
Default Gateway: 192.168.12.129
DNS Server: 0.0.0.0

IPv6 Configuration

DHCP Auto Config Static

IPv6 Address: FE80::202:16FF:FE33:C65
Link Local Address: FE80::202:16FF:FE33:C65
IPv6 Gateway:
IPv6 DNS Server:

802.1X: Use 802.1X Security

Top

GST-PC

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

DHCP Static DHCP request successful.

IP Address: 192.168.12.6
Subnet Mask: 255.255.255.192
Default Gateway: 192.168.12.1
DNS Server: 0.0.0.0

IPv6 Configuration

DHCP Auto Config Static

IPv6 Address: FE80::2D0:D3FF:FE92:E049
Link Local Address: FE80::2D0:D3FF:FE92:E049
IPv6 Gateway:
IPv6 DNS Server:

802.1X: Use 802.1X Security

Top

LOG-PC

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

DHCP Static DHCP request successful.

IP Address: 192.168.11.135
Subnet Mask: 255.255.255.192
Default Gateway: 192.168.11.129
DNS Server: 0.0.0.0

IPv6 Configuration

DHCP Auto Config Static

IPv6 Address: FE80::240:BFF:FE75:699B
Link Local Address: FE80::240:BFF:FE75:699B
IPv6 Gateway:
IPv6 DNS Server:

802.1X: Use 802.1X Security

Top

CUST-PC

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

DHCP Static DHCP request successful.

IP Address: 192.168.11.199
Subnet Mask: 255.255.255.192
Default Gateway: 192.168.11.193
DNS Server: 0.0.0.0

IPv6 Configuration

DHCP Auto Config Static

IPv6 Address: /
Link Local Address: FE80::230:F2FF:FE41:8033
IPv6 Gateway:
IPv6 DNS Server:
802.1X
 Use 802.1X Security

Top

MGT-PC

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

DHCP Static DHCP request successful.

IP Address: 192.168.10.6
Subnet Mask: 255.255.255.192
Default Gateway: 192.168.10.1
DNS Server: 0.0.0.0

IPv6 Configuration

DHCP Auto Config Static

IPv6 Address: /
Link Local Address: FE80::209:7CFF:FECB:621C
IPv6 Gateway:
IPv6 DNS Server:
802.1X
 Use 802.1X Security

Top

ACC-PC

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

DHCP Static DHCP request successful.

IP Address: 192.168.11.5
Subnet Mask: 255.255.255.192
Default Gateway: 192.168.11.1
DNS Server: 0.0.0.0

IPv6 Configuration

DHCP Auto Config Static

IPv6 Address: / Link Local Address: FE80::2D0:FFFF:FE03:DD75
IPv6 Gateway: IPv6 DNS Server:

802.1X

Use 802.1X Security

Top

MKT-PC

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration

DHCP Static DHCP request successful.

IP Address: 192.168.10.197
Subnet Mask: 255.255.255.192
Default Gateway: 192.168.10.193
DNS Server: 0.0.0.0

IPv6 Configuration

DHCP Auto Config Static

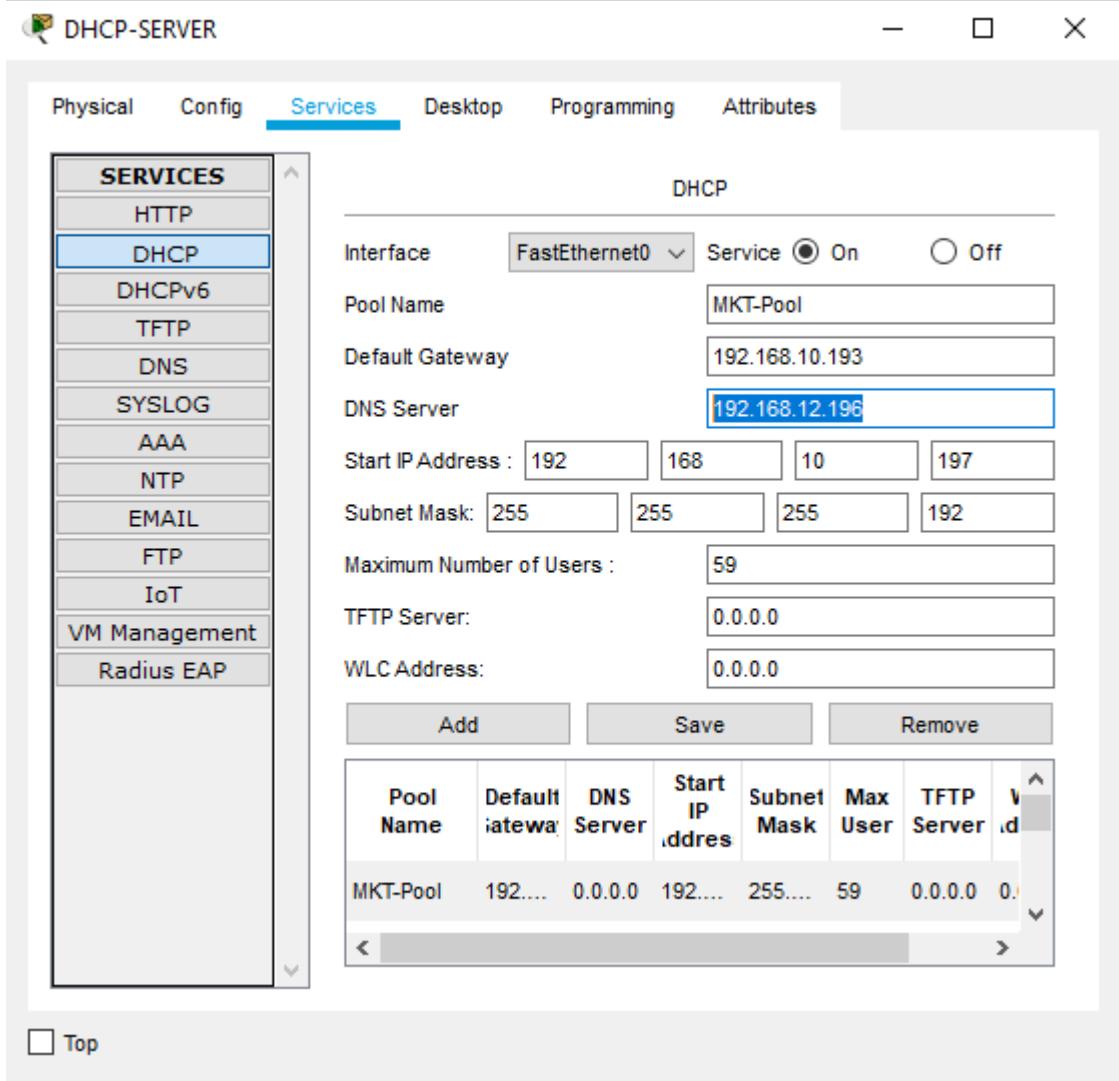
IPv6 Address: / Link Local Address: FE80::20A:41FF:FED9:5529
IPv6 Gateway: IPv6 DNS Server:

802.1X

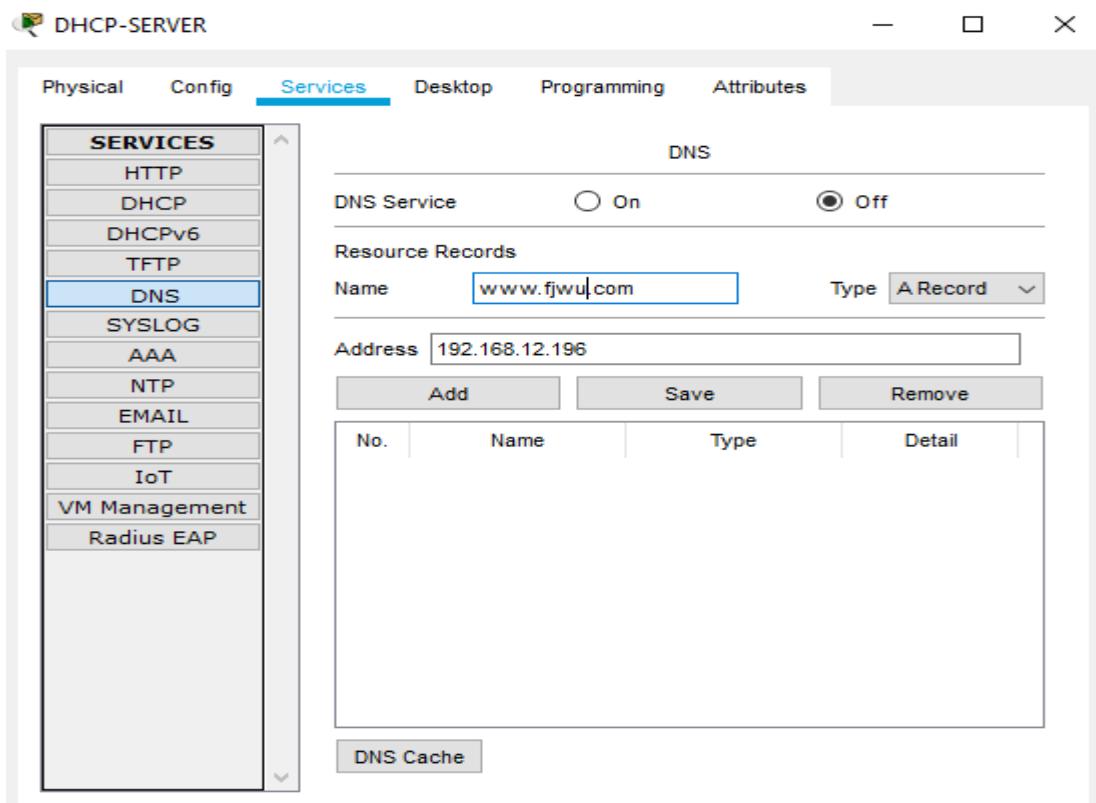
Use 802.1X Security

Top

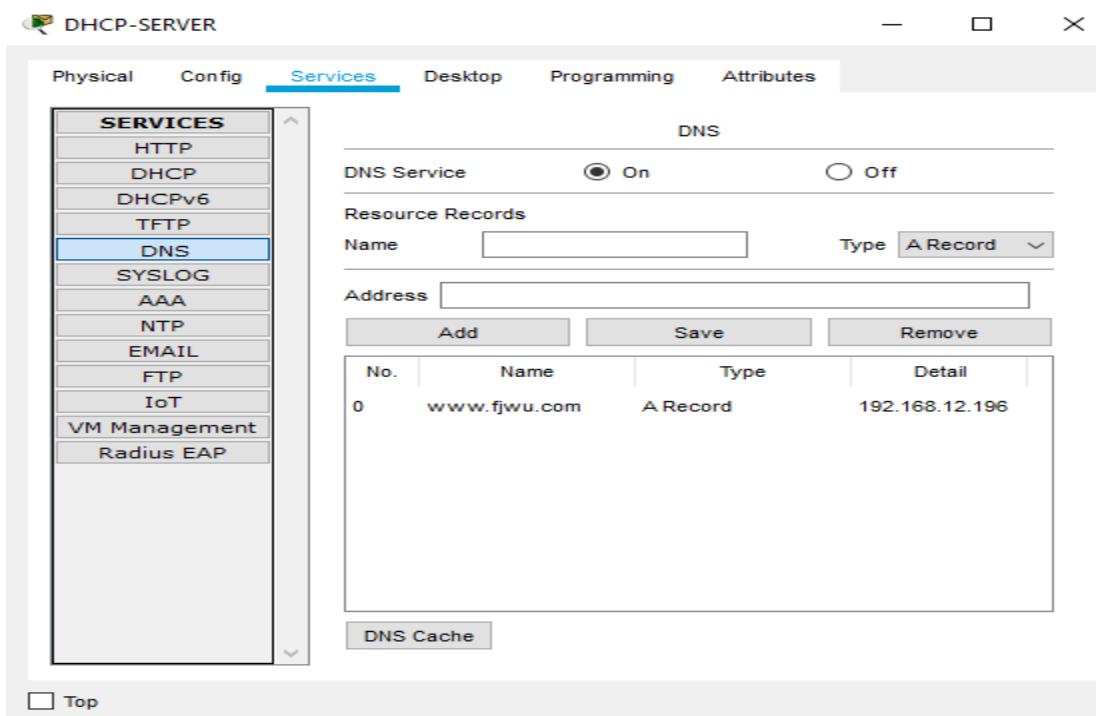
- **DNS Server:** (to all the pools)



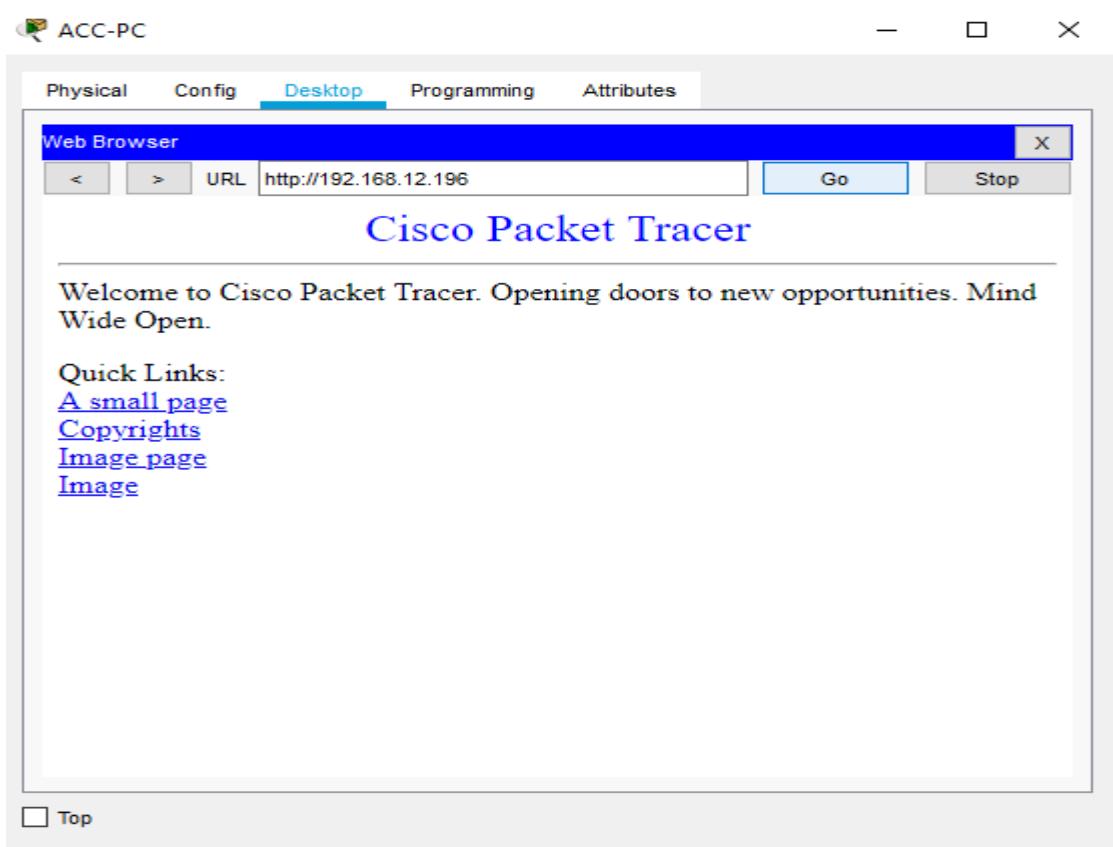
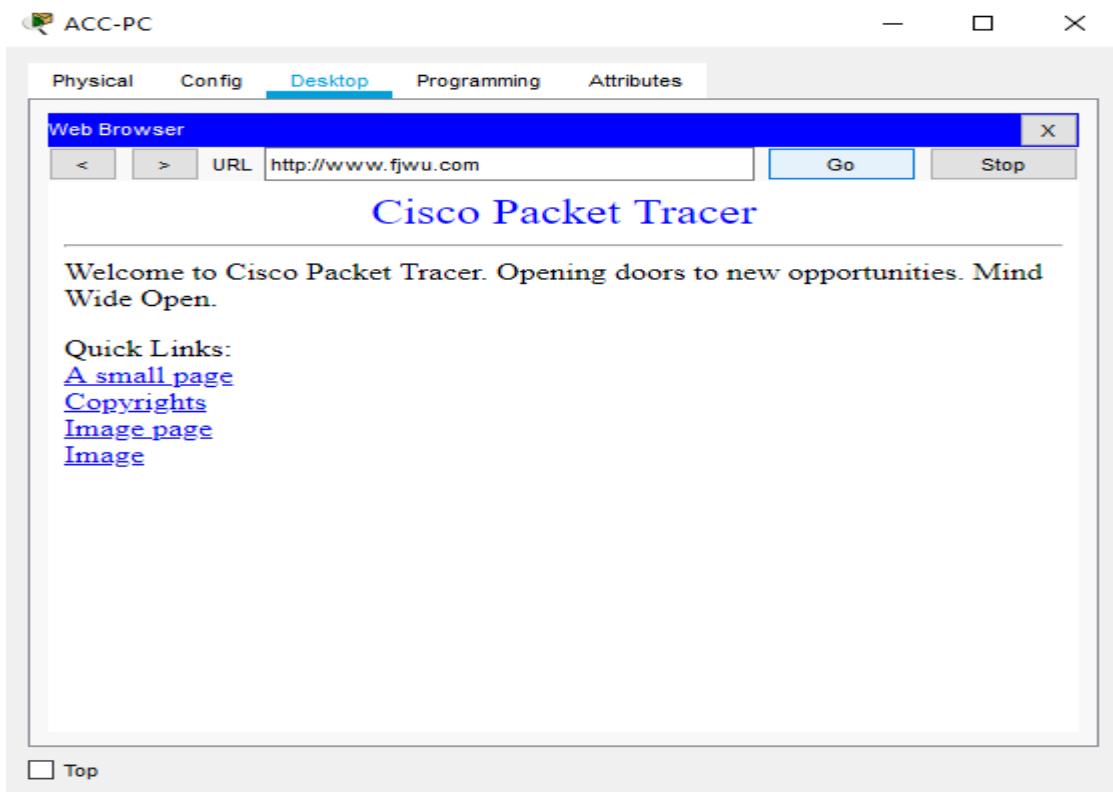
| Pool Name | Default Gateway | DNS Server | Start IP Address | Subnet Mask | Max User | TFTP Server | WLC Address |
|------------|-----------------|----------------|------------------|-----------------|----------|-------------|-------------|
| Mgt-Pool | 192.168.10.1 | 192.168.12.196 | 192.168.10.6 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| HR-Pool | 192.168.10.129 | 192.168.12.196 | 192.168.10.134 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| Rsc-Pool | 192.168.10.65 | 192.168.12.196 | 192.168.10.70 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| FIN-Pool | 192.168.11.65 | 192.168.12.196 | 192.168.11.70 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| ACC-Pool | 192.168.11.1 | 192.168.12.196 | 192.168.11.5 | 255.255.255.192 | 59 | 0.0.0.0 | 0.0.0.0 |
| LOG-Pool | 192.168.11.129 | 192.168.12.196 | 192.168.11.134 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| CUST-Pool | 192.168.11.193 | 192.168.12.196 | 192.168.11.197 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |
| QIFST-Pool | 192.168.12.1 | 192.168.12.196 | 192.168.12.5 | 255.255.255.192 | 58 | 0.0.0.0 | 0.0.0.0 |



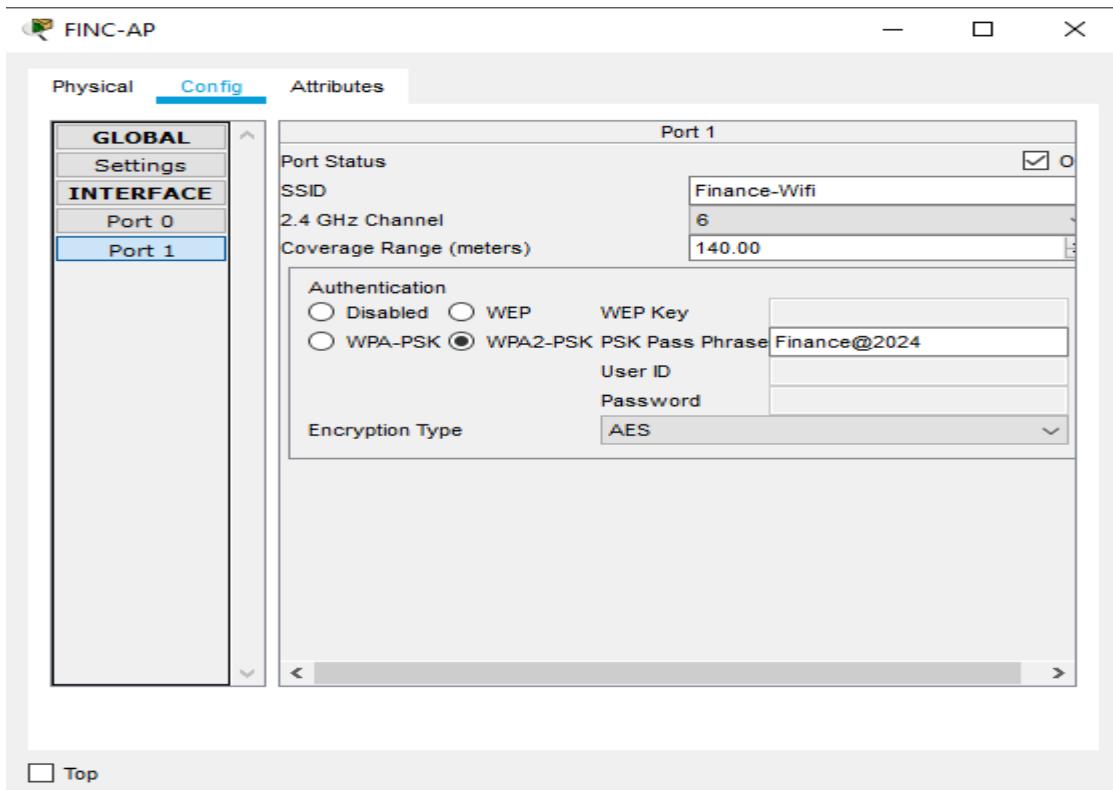
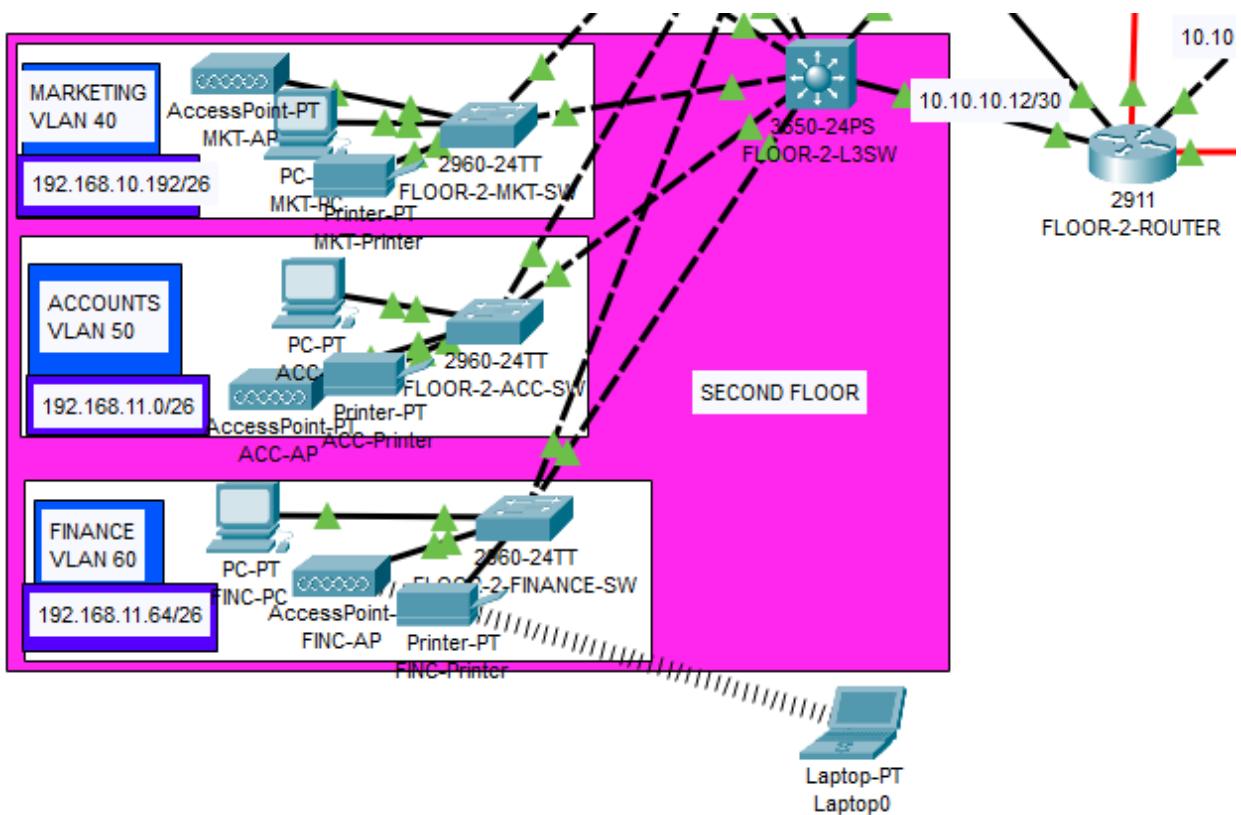
Top



Top



- Wireless network configuration.



Laptop0

Physical Config Desktop Programming Attributes

MODULES

- WPC300N
- PT-LAPTOP-NM-1AM
- PT-LAPTOP-NM-1CE
- PT-LAPTOP-NM-1CFE
- PT-LAPTOP-NM-1CGE
- PT-LAPTOP-NM-1FFE
- PT-LAPTOP-NM-1FGE
- PT-LAPTOP-NM-1W
- PT-LAPTOP-NM-1W-A
- PT-LAPTOP-NM-1W-AC
- PT-LAPTOP-NM-3G/4G
- PT-HEADPHONE
- PT-MICROPHONE

Physical Device View

Zoom In Original Size Zoom Out

Customize Icon in Physical View Customize Icon in Logical View

The Linksys-WPC300N module provides one 2.4GHz wireless interface suitable for connection to wireless networks. The module supports protocols that use Ethernet for LAN access.

Top

Laptop0

Physical Config **Desktop** Programming Attributes

Link Information **Connect** **Profiles**

Below is a list of available wireless networks. To search for more wireless networks, click the Refresh button. To view more information about a network, select the wireless network name. To connect to that network, click the Connect button below.

| Wireless Network Name | CH | Signal |
|-----------------------|----|--------|
| Default | 1 | 33% |
| Default | 1 | 39% |
| Default | 1 | 39% |
| Finance-Wifi | 1 | 39% |
| Default | 1 | 39% |

Site Information

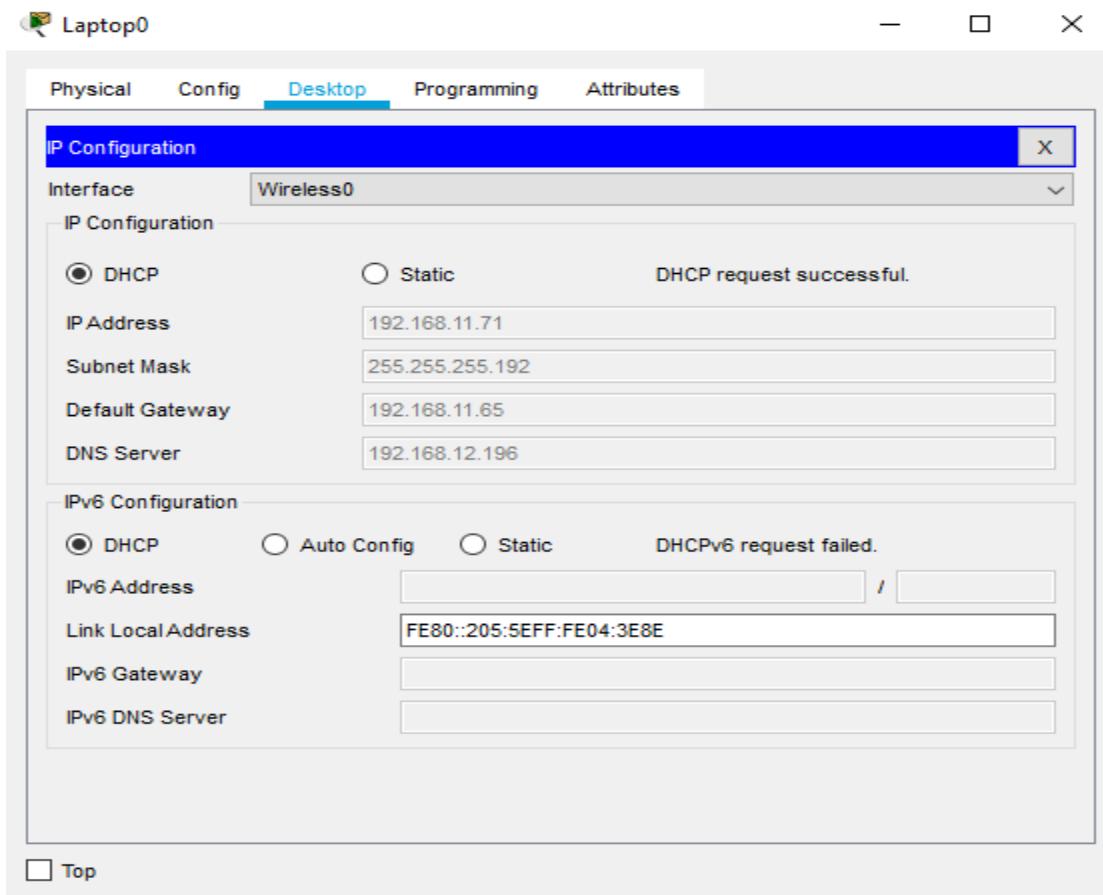
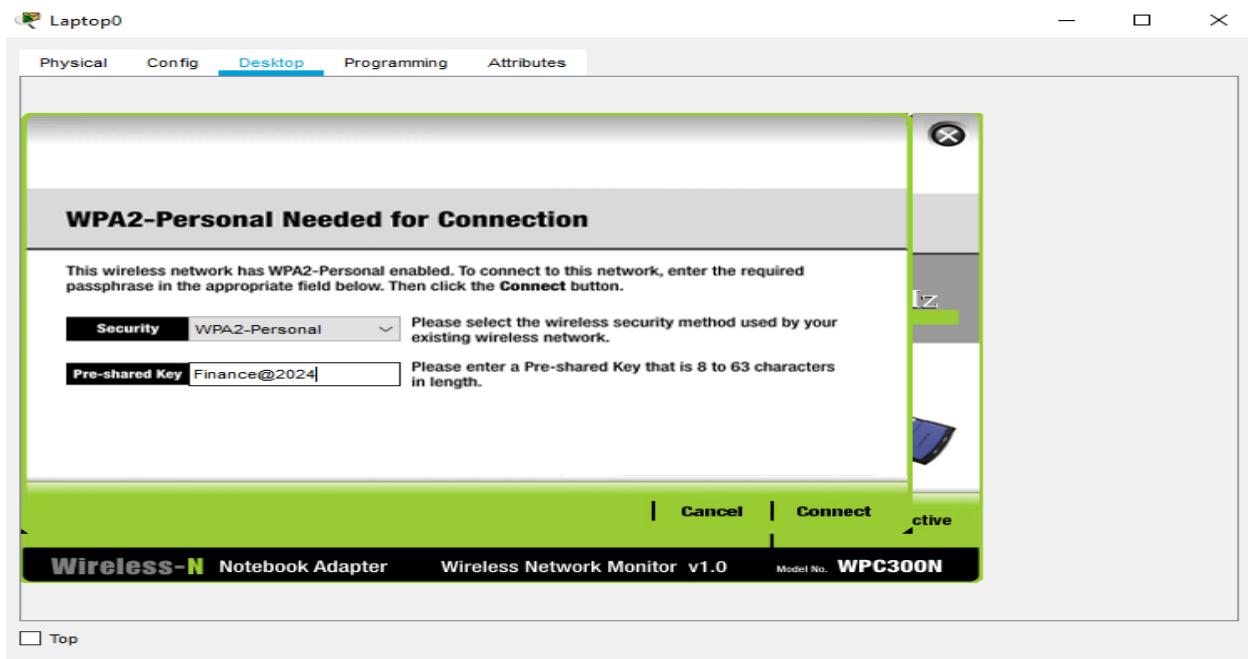
Wireless Mode Infrastructure
Network Type Mixed B/G
Radio Band Auto
Security WPA2-PSK
MAC Address 00:01:97:AE:43:0B

2.4 GHz

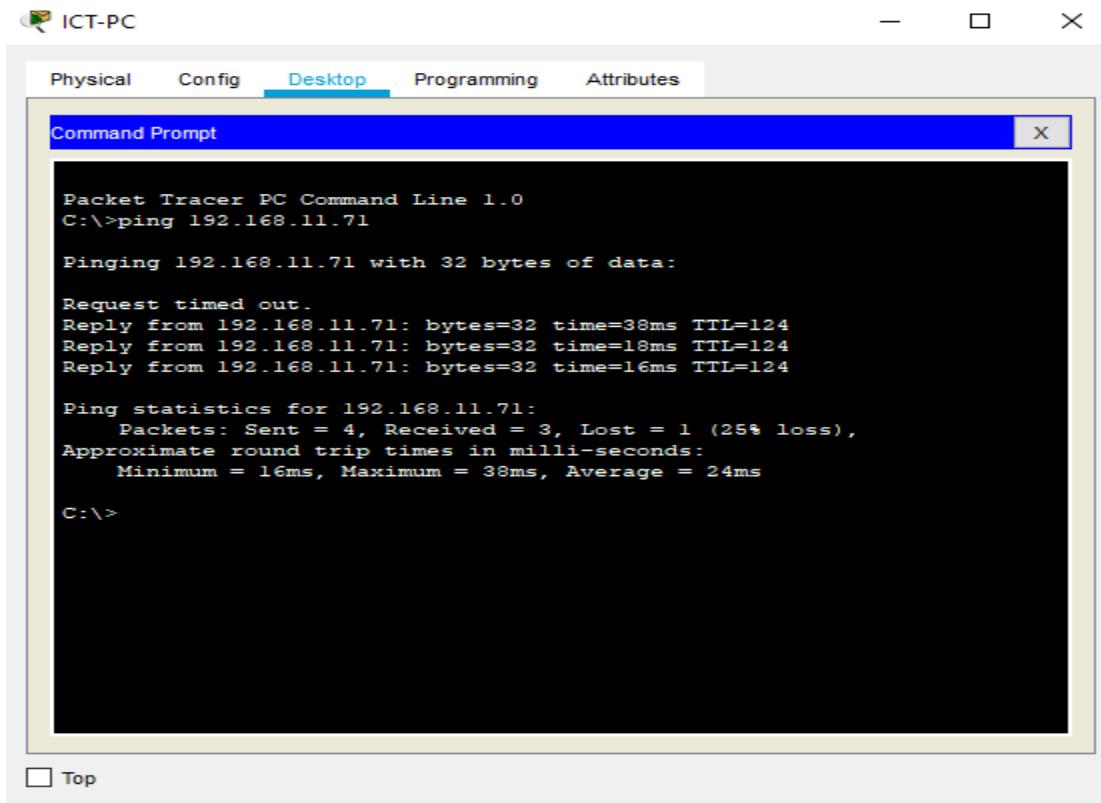
Adapter is Active

Wireless-N Notebook Adapter Wireless Network Monitor v1.0 Model No. **WPC300N**

Top



- Ping ICT PC to the Laptop:



Packet Tracer PC Command Line 1.0
C:\>ping 192.168.11.71

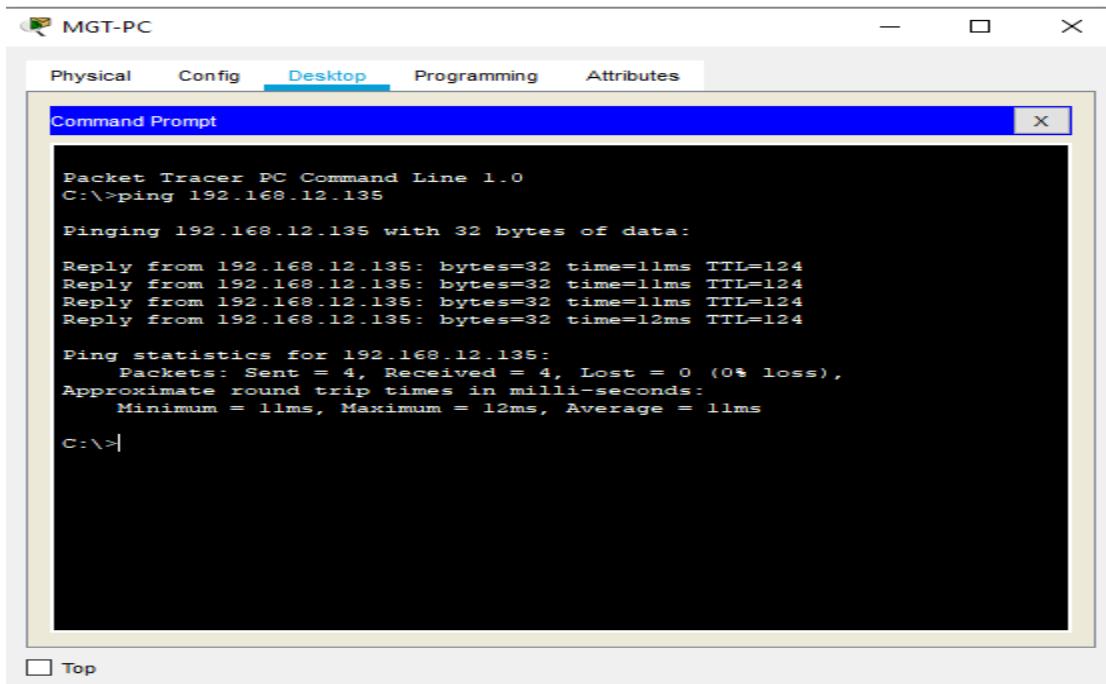
Pinging 192.168.11.71 with 32 bytes of data:

Request timed out.
Reply from 192.168.11.71: bytes=32 time=38ms TTL=124
Reply from 192.168.11.71: bytes=32 time=18ms TTL=124
Reply from 192.168.11.71: bytes=32 time=16ms TTL=124

Ping statistics for 192.168.11.71:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
Minimum = 16ms, Maximum = 38ms, Average = 24ms

C:\>

- Ping Mgt PC(First Floor) to the ICT PC(Fourth Floor):



Packet Tracer PC Command Line 1.0
C:\>ping 192.168.12.135

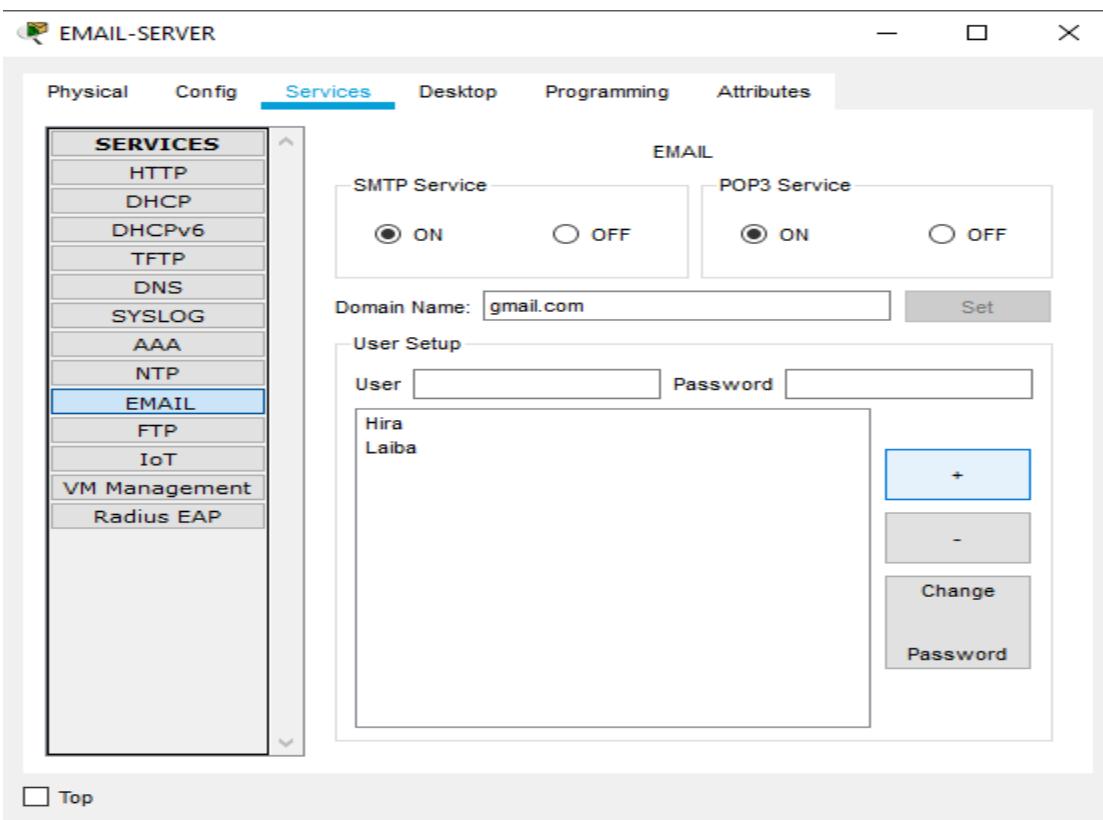
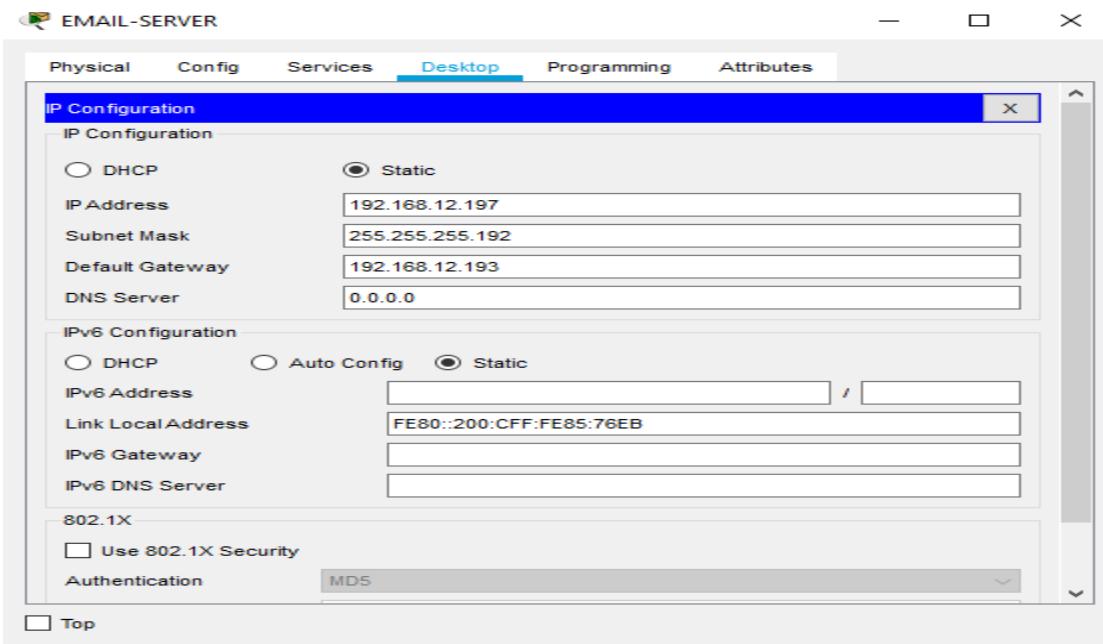
Pinging 192.168.12.135 with 32 bytes of data:

Reply from 192.168.12.135: bytes=32 time=11ms TTL=124
Reply from 192.168.12.135: bytes=32 time=11ms TTL=124
Reply from 192.168.12.135: bytes=32 time=11ms TTL=124
Reply from 192.168.12.135: bytes=32 time=12ms TTL=124

Ping statistics for 192.168.12.135:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 11ms, Maximum = 12ms, Average = 11ms

C:\>

- Email Server Configuration:



ICT-PC

Physical Config Desktop Programming Attributes

Configure Mail



User Information

Your Name:

Hira

Email Address

Hira@gmail.com

Server Information

Incoming Mail Server

192.168.12.197

Outgoing Mail Server

192.168.12.197

Logon Information

User Name:

Hira

Password:

Save

Clear

Reset

Top

MGT-PC

Physical Config Desktop Programming Attributes

Configure Mail



User Information

Your Name:

Laiba

Email Address

Laiba@gmail.com

Server Information

Incoming Mail Server

192.168.12.197

Outgoing Mail Server

192.168.12.197

Logon Information

User Name:

Laiba

Password:

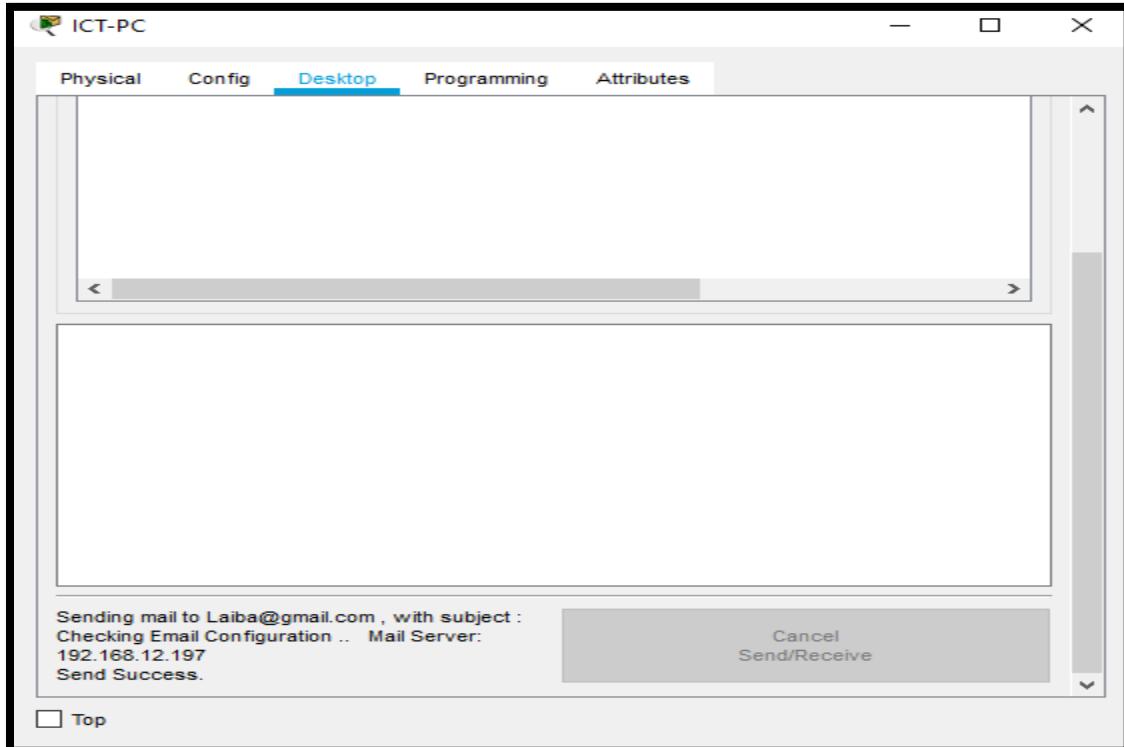
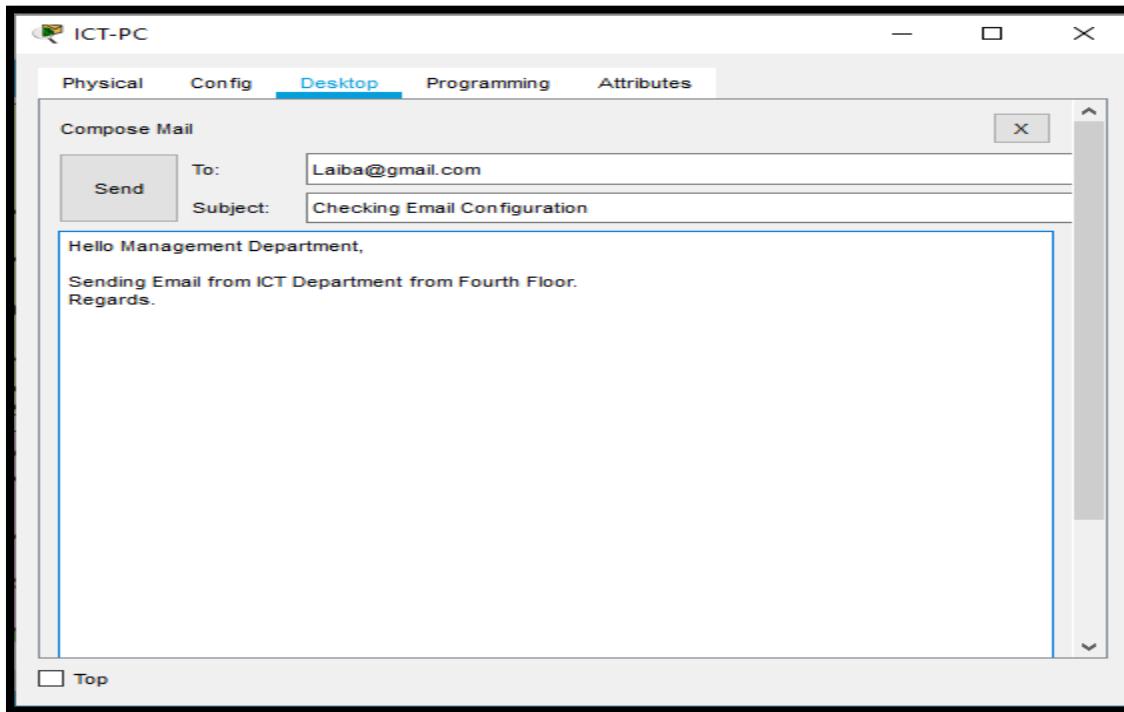
Save

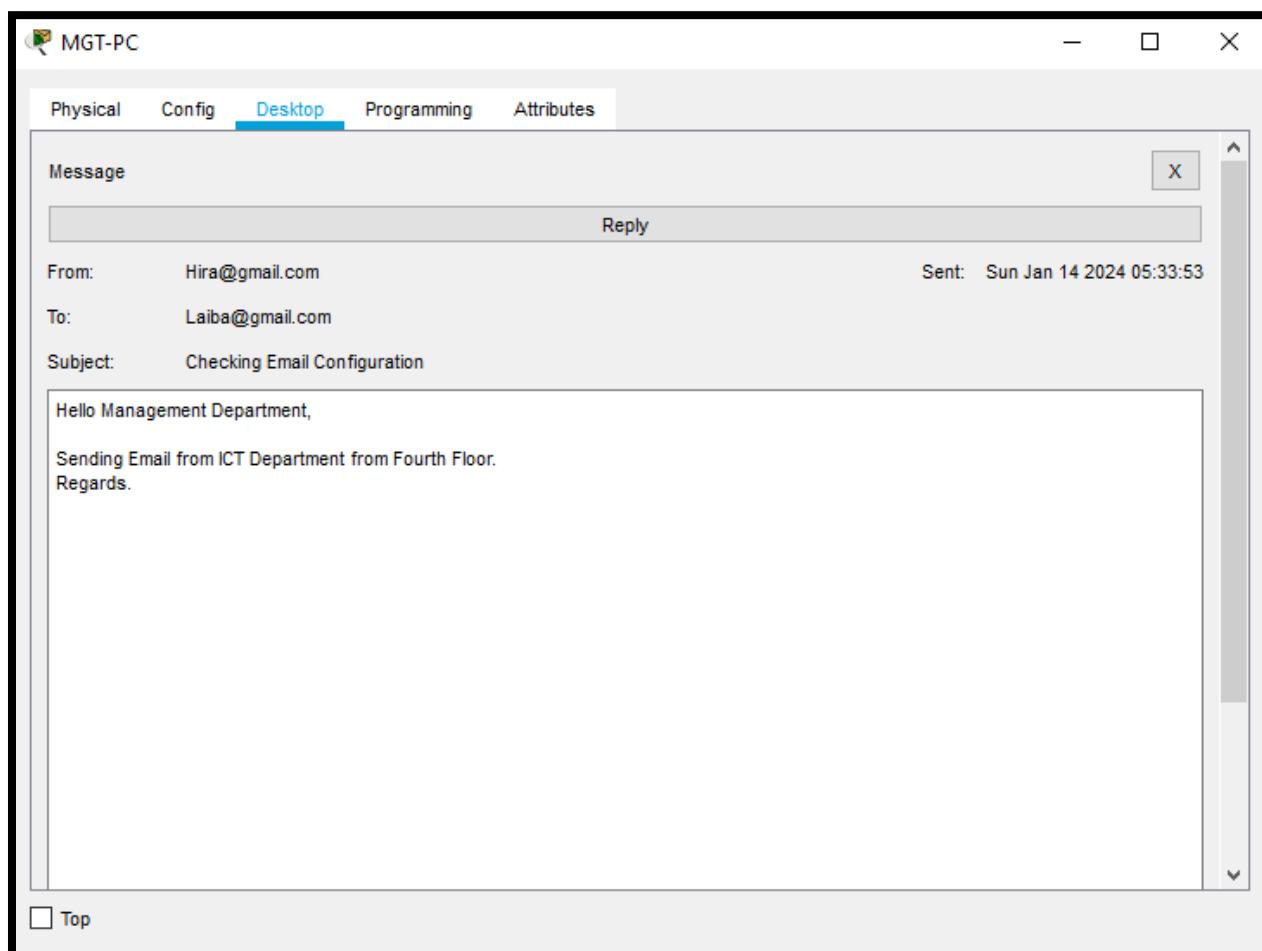
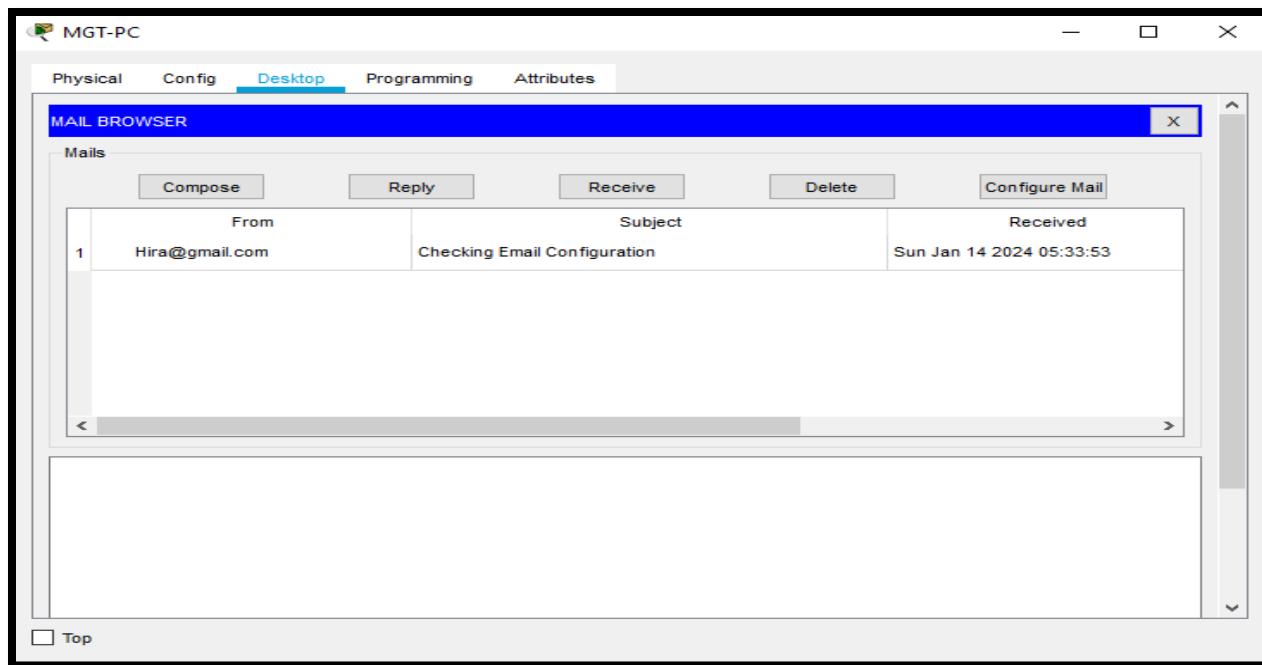
Clear

Reset

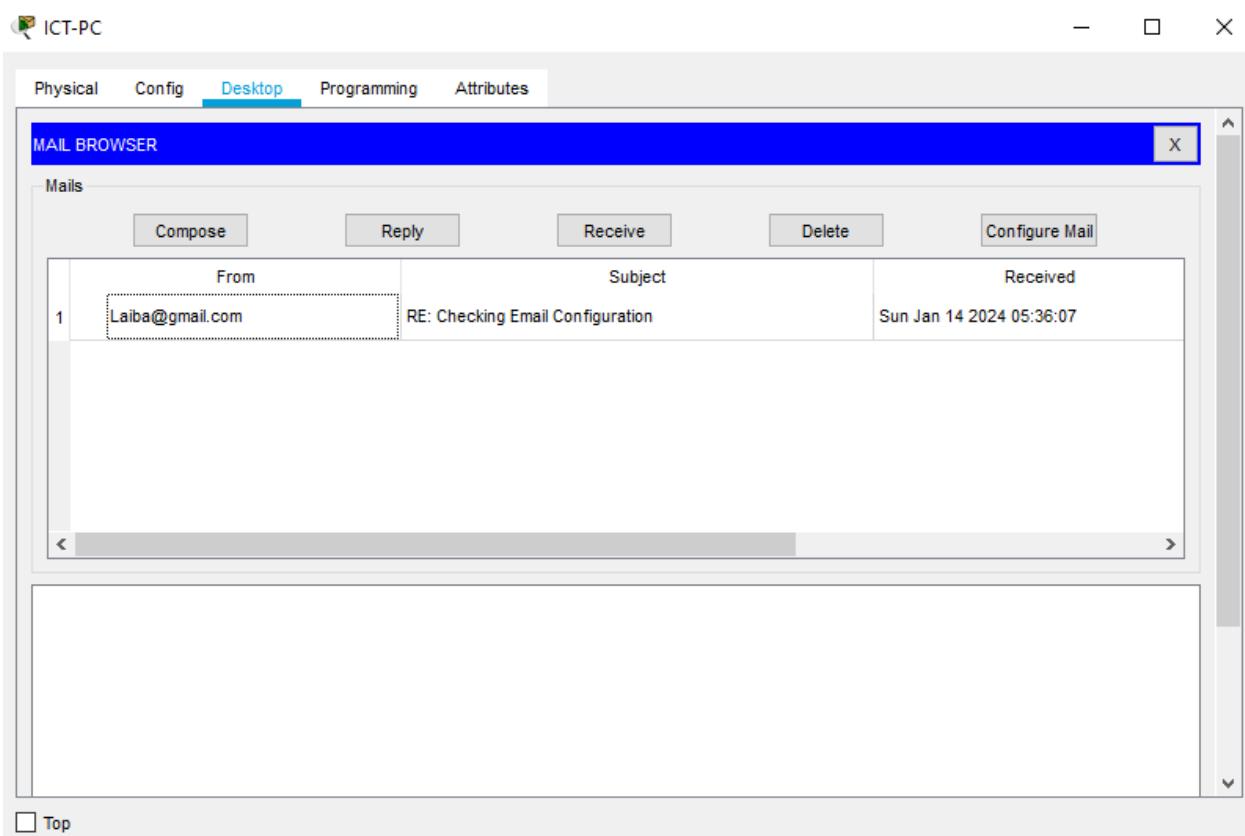
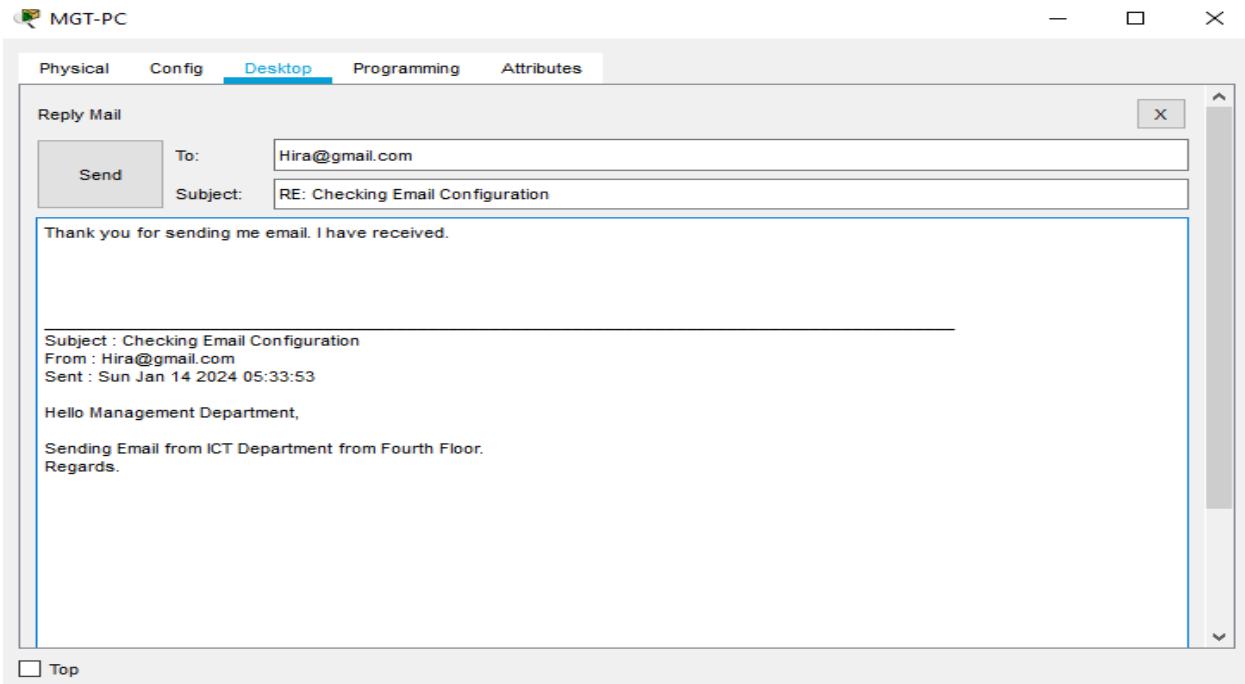
Top

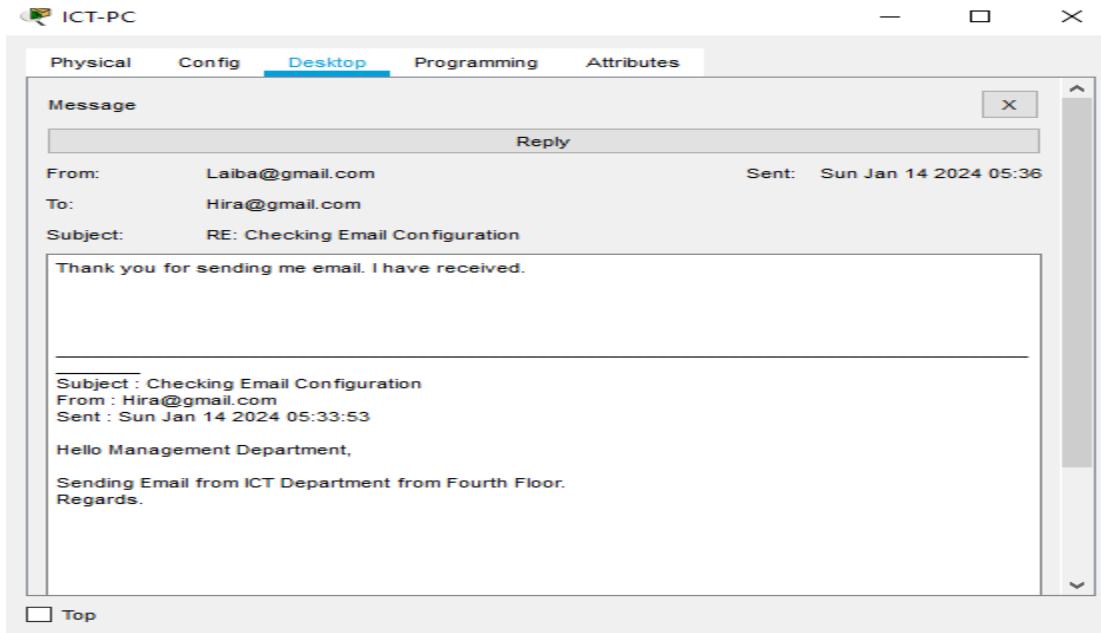
- Sending Email from ICT Dept PC (Fourth Floor) to Mgt Dept PC(First Floor):



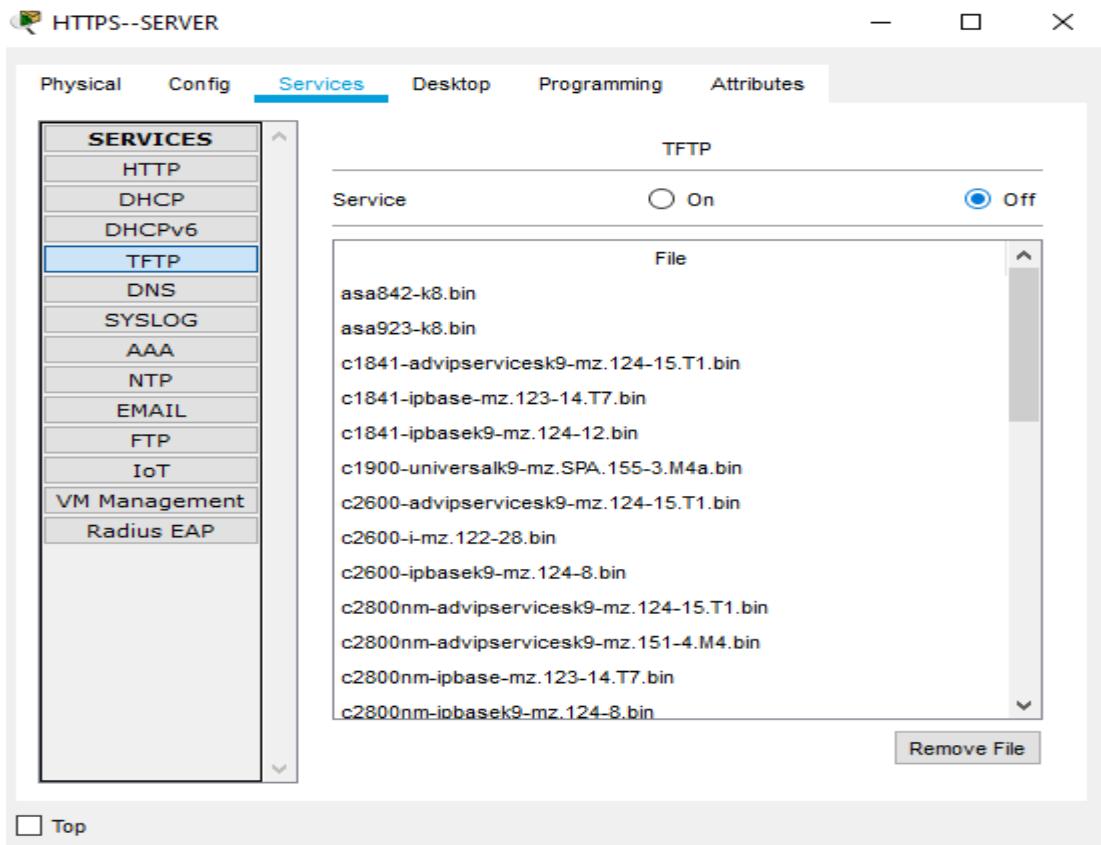


- **Sending Reply:**





- Successfully Configures the email server.
- HTTP Server Configuration:



HTTPS--SERVER

Physical Config Services Desktop Programming Attributes

SERVICES

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

File Name: index.html

```
<html>
<center><font size='+2' color='blue'>Cisco Packet Tracer</font></center>
<hr>Welcome to LHL Bank Limited
<p>Quick Links:
<br><a href='helloworld.html'>A small page</a>
<br><a href='copyrights.html'>Copyrights</a>
<br><a href='image.html'>Image page</a>
<br><a href='cscoptlogo177x111.jpg'>Image</a>
</html>
```

File Manager **Save**

Top

HTTPS--SERVER

Physical Config Services Desktop Programming Attributes

SERVICES

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

File Name: index.html

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<html>
<center><font size='+2' color='blue'>LHL Bank Limited</font></center>
<hr>Welcome to LHL Bank Limited
<p>Quick Links:
<br><a href='helloworld.html'>A small page</a>
<br><a href='copyrights.html'>Copyrights</a>
<br><a href='image.html'>Image page</a>
<br><a href='cscoptlogo177x111.jpg'>Image</a>
</html>
```

File Manager **Save**

Top

