CISCO Internship Project

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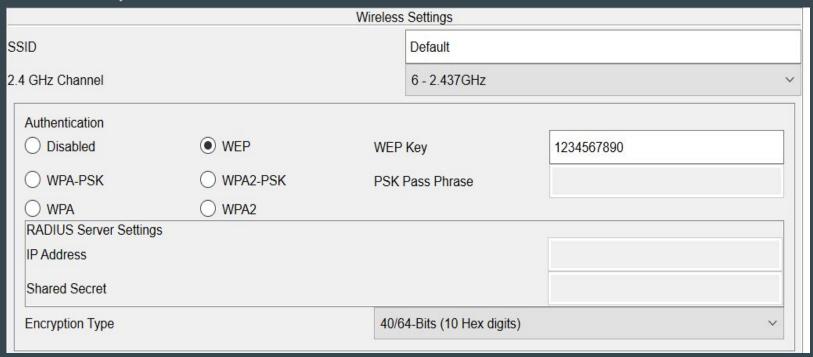
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Layout

- The packet tracer activity depicts the college layout for two floors.
- GROUND FLOOR: The ground floor consists of canteen area, library and a admin room.
- FIRST FLOOR: The first floor consists of administration, IT dept, accounts, classroom and lab.
- The routers between the two floors Interact using Routing information protocol(RIP) version1.

Ground Floor

- The wifi in the library is SECURED using 10 hex characters WEP authentication.
- The library administration has there own network.

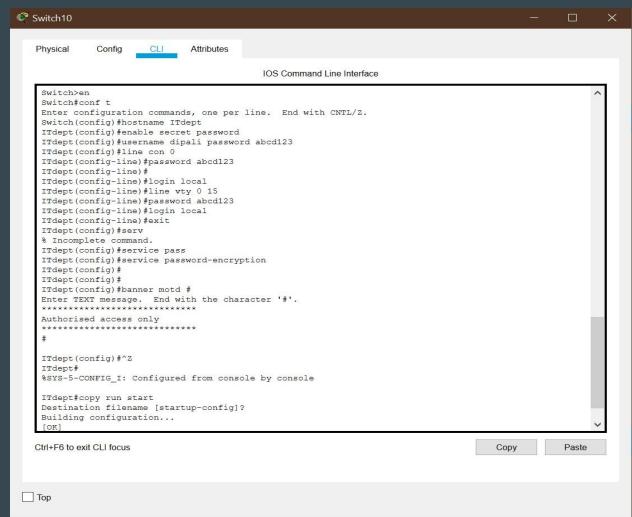| Wireless Settings			
SSID		Default	
2.4 GHz Channel		6 - 2.437GHz	⌄
Authentication			
⦿ WEP	WEP Key	1234567890	
○ Disabled			
○ WPA-PSK	○ WPA2-PSK	PSK Pass Phrase	
○ WPA	○ WPA2		
RADIUS Server Settings			
IP Address			
Shared Secret			
Encryption Type		40/64-Bits (10 Hex digits)	⌄

First Floor

- The first floor has the IT dept, Administration, Accounts, Class and lab
- Each section has individual networks.
- The IT department has a network of their own and also a server for the entire floor.
- The server is configured with the emails of all the pcs in the first floor network and thus communication using email is made possible.
- The CLIs of the routers and switches are **encrypted using password** so that **no unauthorised access is not possible.**
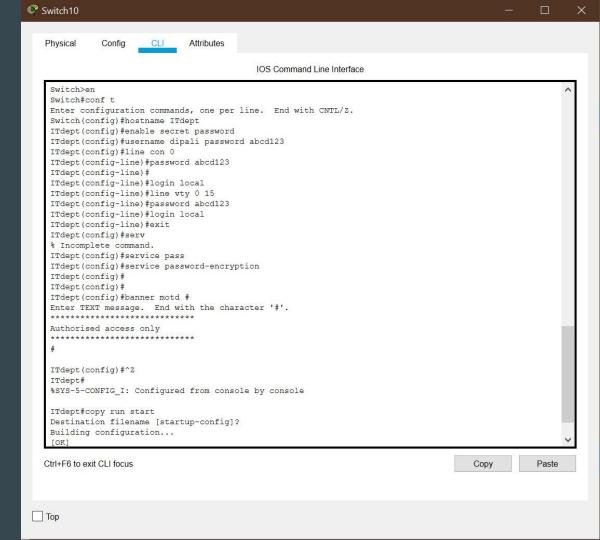
Router encryption

Physical   Config   CLI   Attributes

IOS Command Line Interface

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname collegerouter
collegerouter(config)#enable secret password
collegerouter(config)#username dipali password abcd123
collegerouter(config)#line con 0
collegerouter(config-line)#password abcd123
collegerouter(config-line)#login local
collegerouter(config-line)#line vty 0 15
collegerouter(config-line)#login local
collegerouter(config-line)#password abcd123
collegerouter(config-line)#login local
collegerouter(config-line)#exit
collegerouter(config)#
collegerouter(config)#service password-encryption
collegerouter(config)#
collegerouter(config)#banner mtod #
                              ^
% Invalid input detected at '^' marker.

collegerouter(config)#banner motd #
Enter TEXT message.  End with the character '#'.

*********************************
Authorised access only
*********************************
#

collegerouter(config)#
collegerouter(config)#
collegerouter(config)#do copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
collegerouter(config)#exit
collegerouter#
```

Ctrl+F6 to exit CLI focus

Copy   Paste

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Switch encryption

Physical　　Config　　**CLI**　　Attributes

IOS Command Line Interface

```
Switch>en
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname ITdept
ITdept(config)#enable secret password
ITdept(config)#username dipali password abcd123
ITdept(config)#line con 0
ITdept(config-line)#password abcd123
ITdept(config-line)#
ITdept(config-line)#login local
ITdept(config-line)#line vty 0 15
ITdept(config-line)#password abcd123
ITdept(config-line)#login local
ITdept(config-line)#exit
ITdept(config)#serv
% Incomplete command.
ITdept(config)#service pass
ITdept(config)#service password-encryption
ITdept(config)#
ITdept(config)#
ITdept(config)#banner motd #
Enter TEXT message.  End with the character '#'.
*****************************
Authorised access only
*****************************
#

ITdept(config)#^Z
ITdept#
%SYS-5-CONFIG_I: Configured from console by console

ITdept#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
```

Ctrl+F6 to exit CLI focus

Copy　　Paste

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IT dept encryption


```
Switch>en
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname ITdept
ITdept(config)#enable secret password
ITdept(config)#username dipali password abcd123
ITdept(config)#line con 0
ITdept(config-line)#password abcd123
ITdept(config-line)#
ITdept(config-line)#login local
ITdept(config-line)#line vty 0 15
ITdept(config-line)#password abcd123
ITdept(config-line)#login local
ITdept(config-line)#exit
ITdept(config)#serv
% Incomplete command.
ITdept(config)#service pass
ITdept(config)#service password-encryption
ITdept(config)#
ITdept(config)#
ITdept(config)#banner motd #
Enter TEXT message.  End with the character '#'.
******************************
Authorised access only
******************************
#

ITdept(config)#^Z
ITdept#
%SYS-5-CONFIG_I: Configured from console by console

ITdept#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
```

Server

Physical   Config   **Services**   Desktop   Programming   Attributes

SERVICES

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

HTTP

HTTP

◉ On   ○ Off

HTTPS

◉ On   ○ Off

File Manager

	File Name	Edit	Delete
1	copyrights.html	(edit)	(delete)
2	cscoptlogo177x111.jpg		(delete)
3	helloworld.html	(edit)	(delete)
4	image.html	(edit)	(delete)
5	index.html	(edit)	(delete)

New File   Import

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Server

Server Firewall

Server0

Physical | Config | Services | **Desktop** | Programming | Attributes

Firewall   [X]

Service   ◉ On ○ Off

Interface | FastEthernet0 ▾

Inbound Rules

Action | [▾]   Protocol | [▾]

Remote IP | [   ]   Remote Wildcard Mask | [   ]

Remote Port | [   ]   Local Port | [   ]

| Save | Remove | Add |

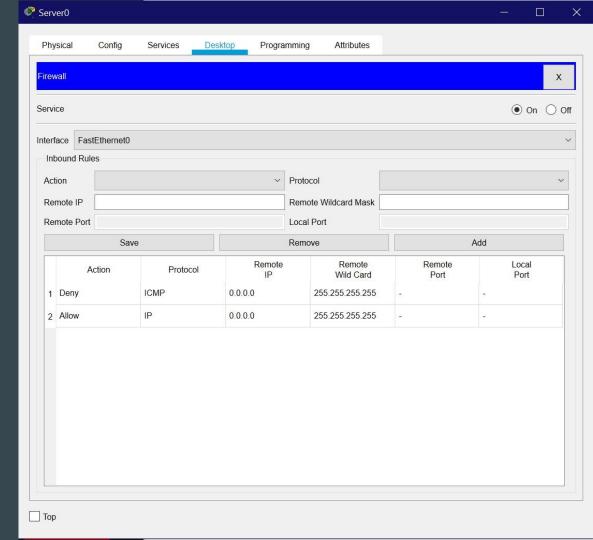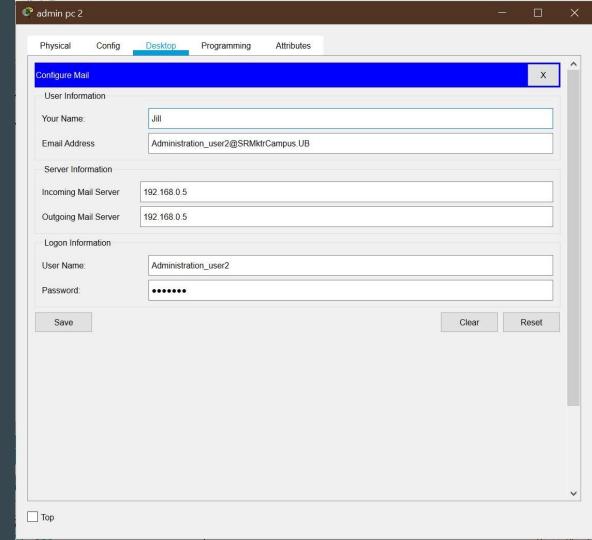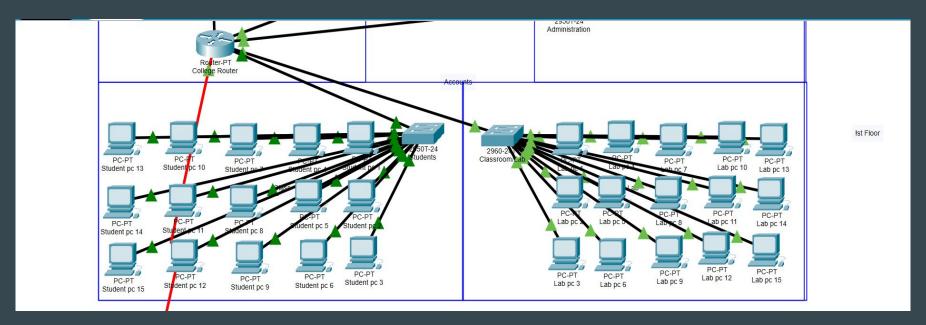|	Action	Protocol	Remote IP	Remote Wild Card	Remote Port	Local Port
1	Deny	ICMP	0.0.0.0	255.255.255.255	-	-
2	Allow	IP	0.0.0.0	255.255.255.255	-	-

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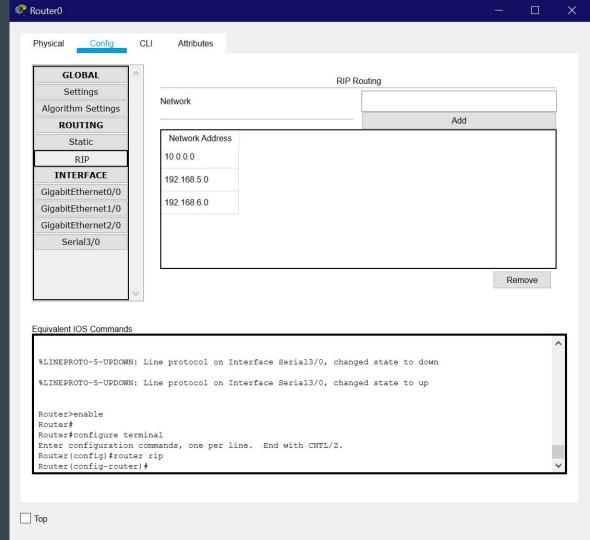
Email Config

Classroom

The classrooms have a network each and can be accessed using email service provided the server.
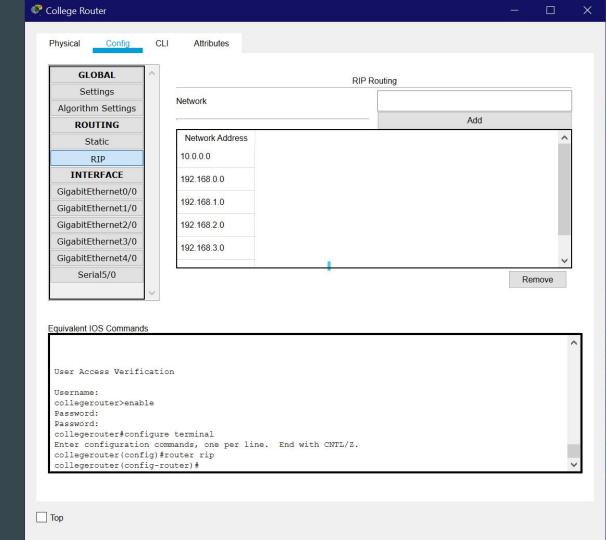
Router Configuration

- The two routers are configured using Routing Information Protocol(RIP) version.
- This protocol is the intradomain (interior) routing protocol which is based on distance vector routing and is used inside an autonomous system.
- The cost of metric in this protocol is hop count which is number of network which need to be passed to reach destination.

RIP

Router0

Physical | Config | CLI | Attributes

GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
GigabitEthernet0/0
GigabitEthernet1/0
GigabitEthernet2/0
Serial3/0

RIP Routing

Network

[   ]

Add

Network Address
10.0.0.0
192.168.5.0
192.168.6.0

Remove

Equivalent IOS Commands

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up


Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router rip
Router(config-router)#
```

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RIP

College Router

Physical   Config   CLI   Attributes

GLOBAL
Settings
Algorithm Settings
ROUTING
Static
RIP
INTERFACE
GigabitEthernet0/0
GigabitEthernet1/0
GigabitEthernet2/0
GigabitEthernet3/0
GigabitEthernet4/0
Serial5/0

RIP Routing

Network

Add

Network Address
10.0.0.0
192.168.0.0
192.168.1.0
192.168.2.0
192.168.3.0

Remove

Equivalent IOS Commands

```
User Access Verification

Username:
collegerouter>enable
Password:
Password:
collegerouter#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
collegerouter(config)#router rip
collegerouter(config-router)#
```

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Hence, the required college configuration was successfully made.

Thank You!