

# Communication & network project

## FIRE AND SMOKE DETACTOR IN SMART HOUSE PROJECT:

lenovo

Group members:

<b>Fedaa Alrubeh</b>	<b>200000982</b>
<b>Reem Aldrourah</b>	<b>220040160</b>
<b>Wadha Alsheddi</b>	<b>2200003246</b>

## Requirements:

- 6 PCs
- 6 Laptops
- 4 (1841 Router)
- 2 servers
- 6 switches
- 2 Ip phone
- 1 Printer
- 1 IoT Car
- 1 IoT Door
- 1 IoT Window
- 1 IoT Garage Door
- 1 IoT Siren
- 1 IoT Smoke Detector
- 1 IoT Smart Phone
- 1 Home Gateway
- 1 IoT Fire Sprinkler

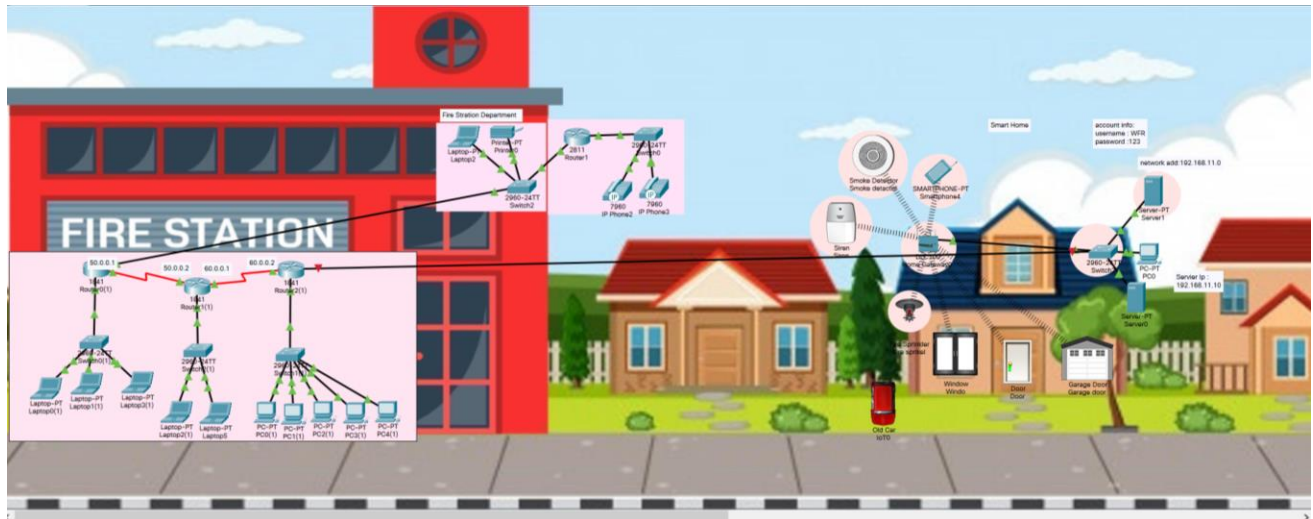
## Project Idea:

To create a smart home by using IoT devices such as a fire and smoke detector that connect directly to the fire station to reduce wasted time by using a smartphone and two Ip phones that can call each other. the smart home can control the damages until the fire people come to the rescue, also showing a warning text and an image to anyone gets close to it.

## Addressing Table:

Device	Interface	IP address	Subnet mask	Default gateway
<b>R0</b>	F0/1	10.0.0.1	255.0.0.0	N/A
	F0/0	11.0.0.1	255.0.0.0	N/A
	S0/0	50.0.0.1	255.0.0.0	N/A
<b>R1</b>	F0/0	30.0.0.1	255.0.0.0	N/A
	S0/1	50.0.0.2	255.0.0.0	N/A
	S0/0	60.0.0.1	255.0.0.0	N/A
<b>R2</b>	F0/0	20.0.0.1	255.0.0.0	N/A
	F0/1	80.0.0.1	255.0.0.0	N/A
	S0/1	60.0.0.2	255.0.0.0	N/A
<b>Switch0</b>				
<b>Switch1</b>				
<b>Switch2</b>				
<b>Laptop 0</b>	NIC	10.0.0.2	255.0.0.0	10.0.0.1
<b>Laptop 1</b>	NIC	10.0.0.3	255.0.0.0	10.0.0.1
<b>Laptop 3</b>	NIC	10.0.0.4	255.0.0.0	10.0.0.1
<b>Laptop 2</b>	NIC	30.0.0.2	255.0.0.0	30.0.0.1
<b>Laptop 5</b>	NIC	30.0.0.5	255.0.0.0	30.0.0.1
<b>Ip phone 2</b>				
<b>IP PHONE 3</b>				
<b>Laptop 2</b>		10.0.0.5	255.0.0.0	10.0.0.1
<b>Printer 0</b>		10.0.0.6	255.0.0.0	10.0.0.1
<b>PC 0</b>	NIC	20.0.0.2	255.0.0.0	20.0.0.1
<b>PC 1</b>	NIC	20.0.0.3	255.0.0.0	20.0.0.1
<b>PC 2</b>	NIC	20.0.0.4	255.0.0.0	20.0.0.1
<b>PC 3</b>	NIC	20.0.0.5	255.0.0.0	20.0.0.1
<b>PC 4</b>	NIC	20.0.0.6	255.0.0.0	20.0.0.1
<b>Server</b>				
<b>Wireless Router</b>				
<b>Smartphone</b>				192.168.0.1
<b>Home gateway</b>				

## Topology:



## Configuring Information:

Switch1

Physical Config CLI Attributes

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

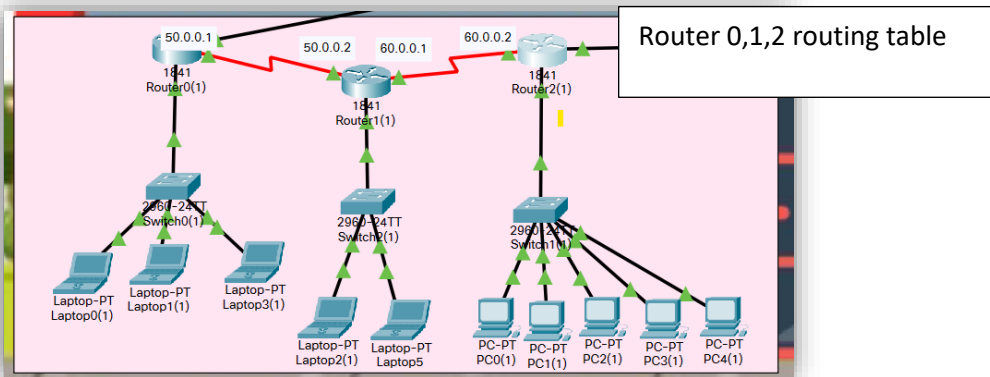
Switch>enable
Switch#conf t
Switch#conf terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname S3
S3(config)#enable secret f1
S3(config)#
S3(config)#line vty 0 15
S3(config-line)#password f2
S3(config-line)#login
S3(config-line)#end
S3#
%SYS-5-CONFIG_I: Configured from console by console
S3#
```

Switch C Ctrl+F6 to exit CLI focus

Copy

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configure:



## Router Configure:

Router0(1)

Physical Config CLI Attributes

**GLOBAL**

Settings

Algorithm Settings

**ROUTING**

Static

RIP

**SWITCHING**

VLAN Database

**INTERFACE**

FastEthernet0/0

FastEthernet0/1

Serial0/0/0

Serial0/0/1

Serial0/1/0

Serial0/1/1

Static Routes

Network

Mask

Next Hop

Add

Network Address

30.0.0.0/8 via 50.0.0.2

20.0.0.0/8 via 50.0.0.2

Remove

Router1(1)

Physical **Config** CLI Attributes

**GLOBAL**

- Settings
- Algorithm Settings
- ROUTING**
  - Static
  - RIP
- SWITCHING**
  - VLAN Database
- INTERFACE**
  - FastEthernet0/0
  - FastEthernet0/1
  - Serial0/0/0
  - Serial0/0/1
  - Serial0/1/0
  - Serial0/1/1

Equivalent IOS Commands

Static Routes

Network

Mask

Next Hop

Add

Network Address

10.0.0.0/8 via 50.0.0.1

20.0.0.0/8 via 60.0.0.2

Remove

Router2(1)

Physical **Config** CLI Attributes

**GLOBAL**

- Settings
- Algorithm Settings
- ROUTING**
  - Static
  - RIP
- SWITCHING**
  - VLAN Database
- INTERFACE**
  - FastEthernet0/0
  - FastEthernet0/1
  - Serial0/0/0
  - Serial0/0/1
  - Serial0/1/0
  - Serial0/1/1

Equivalent IOS Commands

Static Routes

Network

Mask

Next Hop

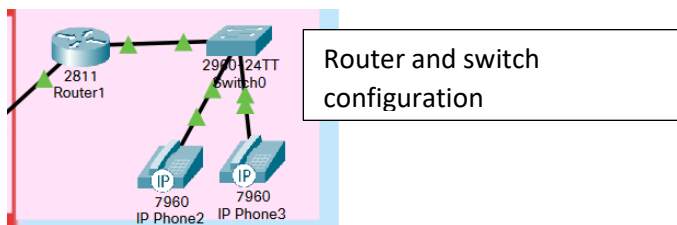
Add

Network Address

10.0.0.0/8 via 60.0.0.1

20.0.0.0/8 via 60.0.0.1

Remove



Would you like to enter the initial configuration dialog? [yes/no]: n

Press RETURN to get started!

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#ip address 12.0.0.1 255.0.0.0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#ip dhcp pool phone
Router(dhcp-config)#network 12.0.0.0 255.0.0.0
Router(dhcp-config)#default-router 12.0.0.1
Router(dhcp-config)#option 150 ip 12.0.0.1
Router(dhcp-config)#exit
Router(config)#
```

Ctrl+F6 to exit CLI focus

```
Router(config)#telephony-service
Router(config-telephony)#max-dn 5
Router(config-telephony)#max-ephones 5
Router(config-telephony)#ip source address 12.0.0.1 port 2000
^
% Invalid input detected at '^' marker.

Router(config-telephony)#ip source address 12.0.0.1 port 2000
^
% Invalid input detected at '^' marker.

Router(config-telephony)#ip source-address 12.0.0.1 port 2000
Router(config-telephony)#auto assign 1 to 5
Router(config-telephony)#exit
Router(config)#
```

```
Router(config)#ephone-dn 1
Router(config-ephone-dn)##%LINK-3-UPDOWN: Interface ephone_dsp DN 1.1, changed state to up

Router(config-ephone-dn)#number 10004
Router(config-ephone-dn)#ephone-dn 2
Router(config-ephone-dn)##%LINK-3-UPDOWN: Interface ephone_dsp DN 2.1, changed state to up

Router(config-ephone-dn)#number 10005
Router(config-ephone-dn)#
```

Ctrl+F6 to exit CLI focus

Copy

Paste

Switch1

Physical Config CLI Attributes

## IOS Command Line Interface

Press RETURN to get started!

%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

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

Switch>enable

Switch#conf t

Switch#conf terminal

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

Switch(config)#interface range fa0/1 - 24

Switch(config-if-range)#switchport mode access

% Invalid input detected at '^' marker.

Switch(config-if-range)#switchport mode access

Switch(config-if-range)#switchport voice vlan 1

Switch(config-if-range)#exit

Switch(config)#



## Server codes:

