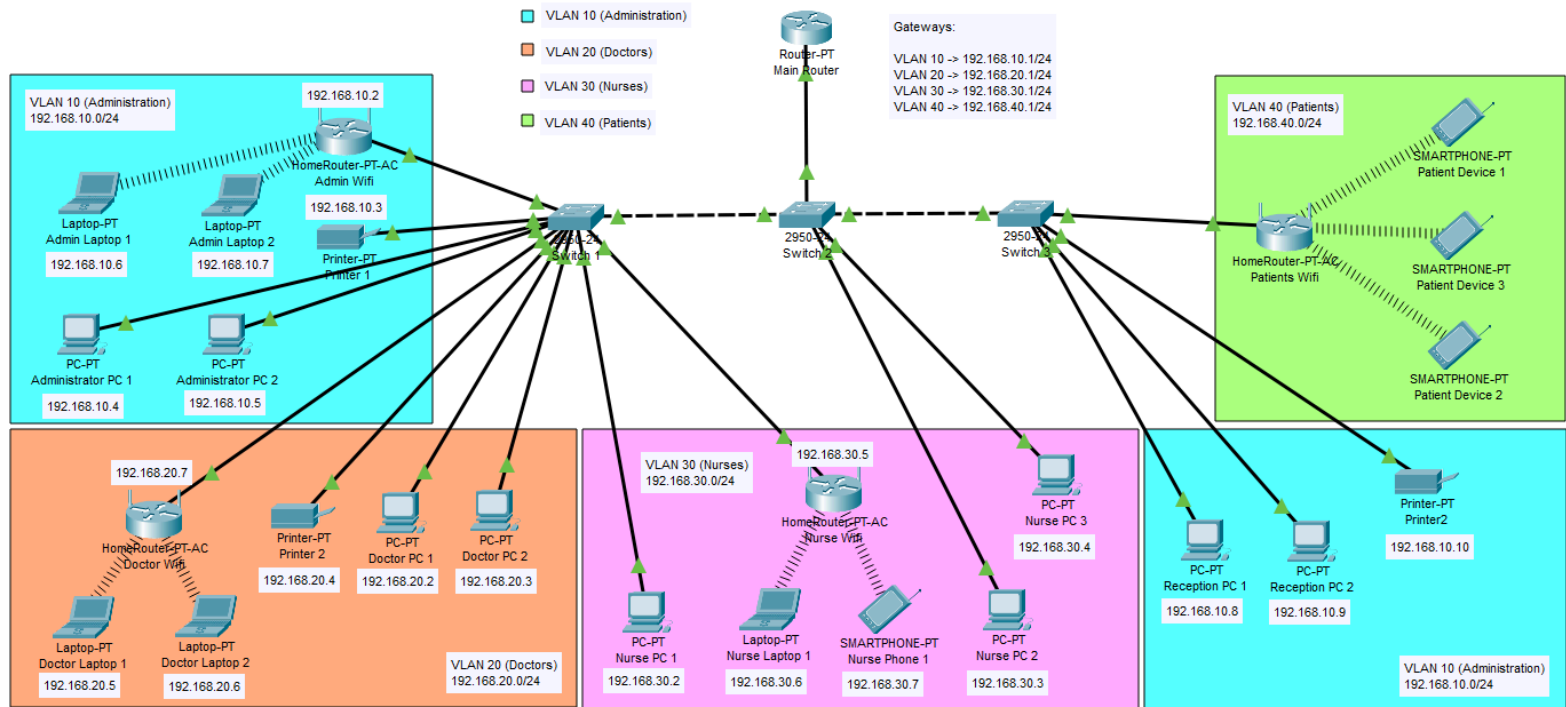


**Name:** Plaras, Johnreb Charles E.

**Section:** UCOS 3-2

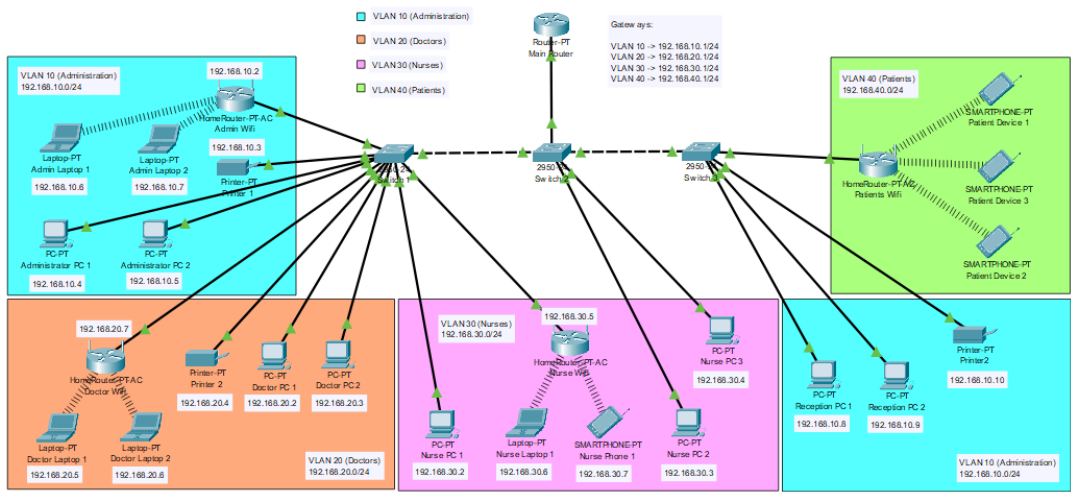
**Diagram:**



Simulation:

INTRA-VLAN COMMUNICATION

VLAN 10 to VLAN 10 Devices:



New Server

Network Card

Printer

IP Phone

VoIP Device

Phone

TV

Tablet

Phone

Phone

Gen. Wire

Scenario 0

New

Delete

Toggle PDU List Window

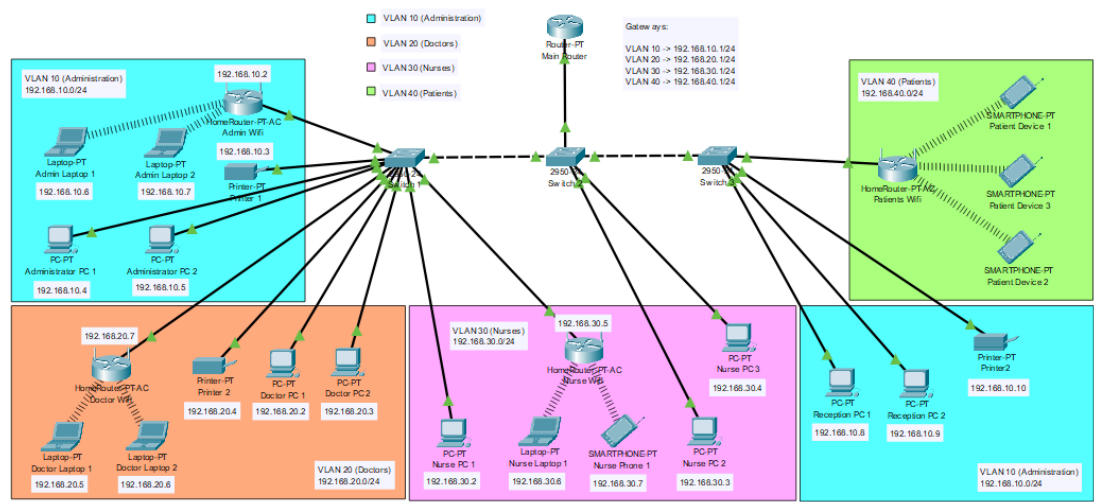
Laptop-PT

| Fire | Last Status | Source             | Destination        | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete |
|------|-------------|--------------------|--------------------|------|-------|-----------|----------|-----|--------|--------|
|      | Successful  | Administrator PC 1 | Printer 1          | ICMP |       | 0.000     | N        | 0   | (edit) |        |
|      | Successful  | Admin Laptop 1     | Administrator PC 2 | ICMP |       | 0.000     | N        | 1   | (edit) |        |
|      | Successful  | Admin Laptop 1     | Printer 1          | ICMP |       | 0.000     | N        | 2   | (edit) |        |
|      | Successful  | Reception PC 1     | Printer2           | ICMP |       | 0.000     | N        | 3   | (edit) |        |

Zoomed In:

| Fire | Last Status | Source             | Destination        | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete |
|------|-------------|--------------------|--------------------|------|-------|-----------|----------|-----|--------|--------|
|      | Successful  | Administrator PC 1 | Printer 1          | ICMP |       | 0.000     | N        | 0   | (edit) |        |
|      | Successful  | Admin Laptop 1     | Administrator PC 2 | ICMP |       | 0.000     | N        | 1   | (edit) |        |
|      | Successful  | Admin Laptop 1     | Printer 1          | ICMP |       | 0.000     | N        | 2   | (edit) |        |
|      | Successful  | Reception PC 1     | Printer2           | ICMP |       | 0.000     | N        | 3   | (edit) |        |

VLAN 20 to VLAN 20 Devices:



Host Computer

Printer

IP Phone

VoIP Device

Phone

TV

Tablet

Smart Phone

Gen. Wire

Laptop-PT

Scenario 0

New

Delete

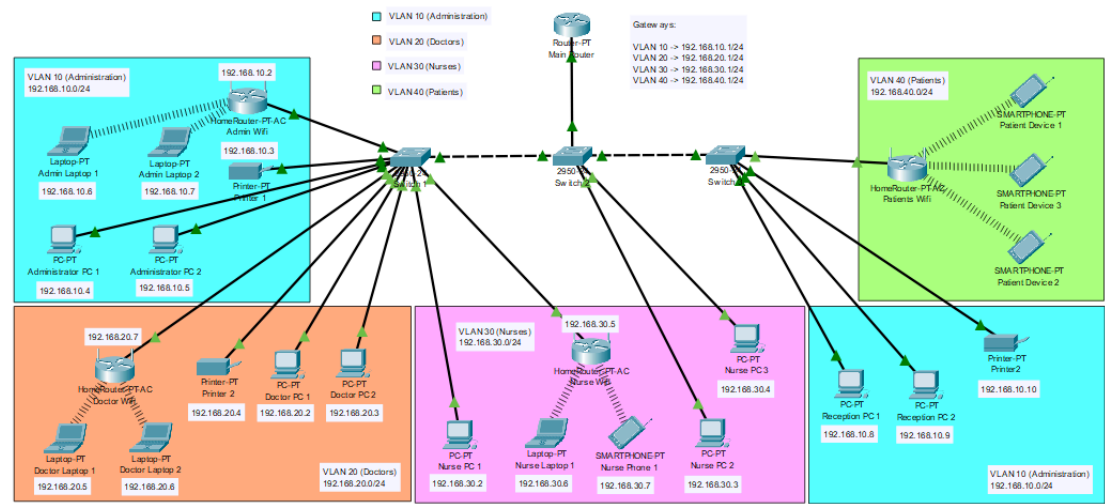
Toggle POU List Window

| Fire | Last Status | Source          | Destination | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete |
|------|-------------|-----------------|-------------|------|-------|-----------|----------|-----|--------|--------|
|      | Successful  | Doctor Laptop 1 | Printer 2   | ICMP |       | 0.000     | N        | 0   | (edit) |        |
|      | Successful  | Doctor PC 1     | Doctor PC 2 | ICMP |       | 0.000     | N        | 1   | (edit) |        |
|      | Successful  | Doctor PC 1     | Doctor Wifi | ICMP |       | 0.000     | N        | 2   | (edit) |        |
|      | Successful  | Doctor PC 2     | Printer 2   | ICMP |       | 0.000     | N        | 3   | (edit) |        |

Zoomed in:

| Fire | Last Status | Source          | Destination | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete |
|------|-------------|-----------------|-------------|------|-------|-----------|----------|-----|--------|--------|
| ●    | Successful  | Doctor Laptop 1 | Printer 2   | ICMP |       | 0.000     | N        | 0   | (edit) |        |
| ●    | Successful  | Doctor PC 1     | Doctor PC 2 | ICMP |       | 0.000     | N        | 1   | (edit) |        |
| ●    | Successful  | Doctor PC 1     | Doctor Wifi | ICMP |       | 0.000     | N        | 2   | (edit) |        |
| ●    | Successful  | Doctor PC 2     | Printer 2   | ICMP |       | 0.000     | N        | 3   | (edit) |        |

VLAN 30 to VLAN 30 Devices:

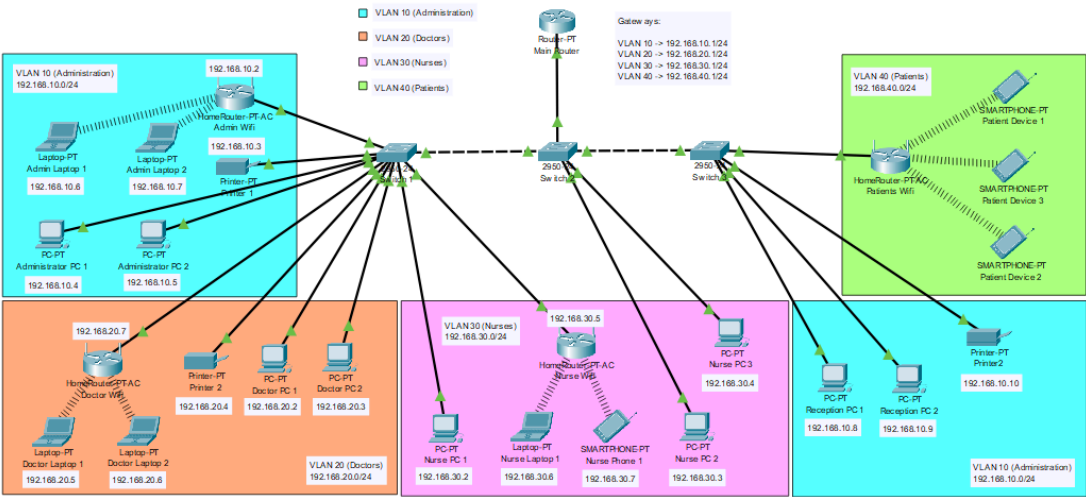


| Fire | Last Status | Source        | Destination    | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete |
|------|-------------|---------------|----------------|------|-------|-----------|----------|-----|--------|--------|
|      | Successful  | Nurse PC 1    | Nurse Laptop 1 | ICMP |       | 0.000     | N        | 0   | (edit) |        |
|      | Successful  | Nurse PC 2    | Nurse PC 3     | ICMP |       | 0.000     | N        | 1   | (edit) |        |
|      | Successful  | Nurse Phone 1 | Nurse PC 1     | ICMP |       | 0.000     | N        | 2   | (edit) |        |
|      | Successful  | Nurse PC 2    | Nurse Wifi     | ICMP |       | 0.000     | N        | 3   | (edit) |        |

Zoomed in:

| Fire | Last Status | Source        | Destination    | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete |
|------|-------------|---------------|----------------|------|-------|-----------|----------|-----|--------|--------|
|      | Successful  | Nurse PC 1    | Nurse Laptop 1 | ICMP |       | 0.000     | N        | 0   | (edit) |        |
|      | Successful  | Nurse PC 2    | Nurse PC 3     | ICMP |       | 0.000     | N        | 1   | (edit) |        |
|      | Successful  | Nurse Phone 1 | Nurse PC 1     | ICMP |       | 0.000     | N        | 2   | (edit) |        |
|      | Successful  | Nurse PC 2    | Nurse Wifi     | ICMP |       | 0.000     | N        | 3   | (edit) |        |

VLAN 40 to VLAN 40 Devices:



Network Controller

Printer

IP Phone

VoIP Device

Phone

TV

Tablet

Smart Phone

Geni Wire

Scenario 0

New

Delete

Toggle PDU List Window

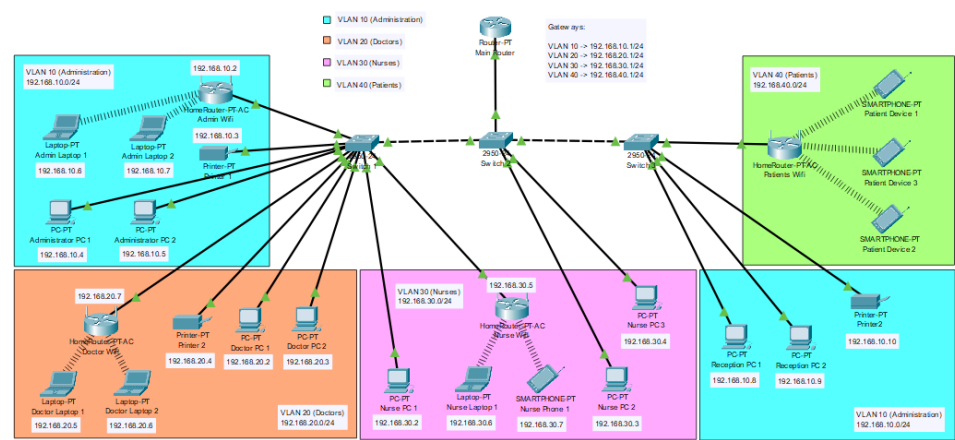
| Fire | Last Status | Source           | Destination      | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete |
|------|-------------|------------------|------------------|------|-------|-----------|----------|-----|--------|--------|
|      | Successful  | Patient Device 2 | Patients Wifi    | ICMP |       | 0.000     | N        | 0   | (edit) |        |
|      | Successful  | Patient Device 3 | Patient Device 2 | ICMP |       | 0.000     | N        | 1   | (edit) |        |
|      | Successful  | Patient Device 1 | Patient Device 3 | ICMP |       | 0.000     | N        | 2   | (edit) |        |
|      | Successful  | Patient Device 3 | Patient Device 1 | ICMP |       | 0.000     | N        | 3   | (edit) |        |

Laptop-PT

Zoomed in:

| Fire | Last Status | Source           | Destination      | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete |
|------|-------------|------------------|------------------|------|-------|-----------|----------|-----|--------|--------|
|      | Successful  | Patient Device 2 | Patients Wifi    | ICMP |       | 0.000     | N        | 0   | (edit) |        |
|      | Successful  | Patient Device 3 | Patient Device 2 | ICMP |       | 0.000     | N        | 1   | (edit) |        |
|      | Successful  | Patient Device 1 | Patient Device 3 | ICMP |       | 0.000     | N        | 2   | (edit) |        |
|      | Successful  | Patient Device 3 | Patient Device 1 | ICMP |       | 0.000     | N        | 3   | (edit) |        |

INTER-VLAN COMMUNICATION



| Fire | Last Status | Source             | Destination        | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete   |
|------|-------------|--------------------|--------------------|------|-------|-----------|----------|-----|--------|----------|
|      | Successful  | Doctor PC 1        | Administrator PC 2 | ICMP |       | 0.000     | N        | 0   | (edit) | (delete) |
|      | Successful  | Nurse PC 1         | Doctor Laptop 2    | ICMP |       | 0.000     | N        | 1   | (edit) | (delete) |
|      | Successful  | Reception PC 1     | Doctor PC 2        | ICMP |       | 0.000     | N        | 2   | (edit) | (delete) |
|      | Successful  | Administrator PC 2 | Nurse Laptop 1     | ICMP |       | 0.000     | N        | 3   | (edit) | (delete) |

Zoomed In:

| Fire | Last Status | Source             | Destination        | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete   |
|------|-------------|--------------------|--------------------|------|-------|-----------|----------|-----|--------|----------|
|      | Successful  | Doctor PC 1        | Administrator PC 2 | ICMP |       | 0.000     | N        | 0   | (edit) | (delete) |
|      | Successful  | Nurse PC 1         | Doctor Laptop 2    | ICMP |       | 0.000     | N        | 1   | (edit) | (delete) |
|      | Successful  | Reception PC 1     | Doctor PC 2        | ICMP |       | 0.000     | N        | 2   | (edit) | (delete) |
|      | Successful  | Administrator PC 2 | Nurse Laptop 1     | ICMP |       | 0.000     | N        | 3   | (edit) | (delete) |

## CLIs:

### Main Router CLI:

The screenshot displays the 'Main Router' window with the 'CLI' tab selected. The window shows the 'System Configuration Dialog' and the 'IOS Command Line Interface'. The configuration commands entered are as follows:

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
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)#interface FastEthernet1/0
Router(config-if)#no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
```

At the bottom of the CLI window, it states: "Router con0 is now available". There are 'Copy' and 'Paste' buttons at the bottom right of the CLI window.

On the right side of the image, there is a network diagram showing a central switch connected to several VLANs. The legend indicates:

- VLAN 10 (Administration)
- VLAN 20 (Doctors)
- VLAN 30 (Nurses)
- VLAN 40 (Patients)

The diagram shows a switch connected to a PC labeled 'PC 2' (20.3) and a PC labeled 'PC-PT Nurse PC 1' (192.168.30.2) which is part of VLAN 30. The switch is also connected to a PC labeled 'Doctors' (0.0/24).

Main Router

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Router>enable
Router#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/0.10
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.10, changed state to up
encap dot1q 10
Router(config-subif)#ip address 192.168.10.1 255.255.255.0
Router(config-subif)#exit
Router(config)#int fa0/0.20
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.20, changed state to up

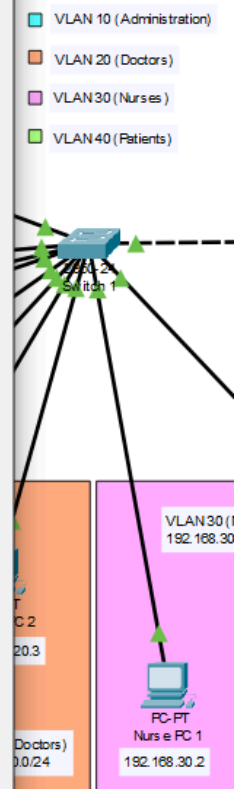
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.20, changed state to up
encap dot1q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#exit
Router(config)#int fa0/0.30
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.30, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.30, changed state to up
encap dot1q 30
Router(config-subif)#ip address 192.168.30.1 255.255.255.0
Router(config-subif)#exit
Router(config)#int fa0/0.40
Router(config-subif)#
%LINK-5-CHANGED: Interface FastEthernet0/0.40, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0.40, changed state to up
encap dot1q 40
Router(config-subif)#ip address 192.168.40.1 255.255.255.0
Router(config-subif)#exit
```

Copy Paste

☐ Top





## Switch 1 CLI:

The screenshot displays the configuration interface for Switch 1, divided into Physical, Config, CLI, and Attributes tabs. The CLI tab is active, showing the IOS Command Line Interface with a series of configuration commands. The commands configure four VLANs (10, 20, 30, 40) with names Administrators, Doctors, Nurses, and Patients respectively. They also configure interfaces fa0/1 and fa0/2-5, setting them to trunk or access mode and assigning them to the appropriate VLANs. The network diagram on the right shows a 2950 switch connected to a PC (Nurse PC 1) and a PC (Nurse PC 2). The PC IP addresses are 192.168.30.7 and 192.168.30.3 respectively. A gateway table is also present.

Switch 1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch>enable
Switch#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name Administrators
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name Doctors
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name Nurses
Switch(config-vlan)#exit
Switch(config)#vlan 40
Switch(config-vlan)#name Patients
Switch(config-vlan)#exit
Switch(config)#^Z
Switch#
%SYS-5-CONFIG_I: Configured from console by console
ieconf ter
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int fa0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan 10,20,30,40
Switch(config-if)#^Z
Switch#
%SYS-5-CONFIG_I: Configured from console by console
conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int range fa0/2-5
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#exit
Switch(config)#int range fa0/6-9
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#exit
```

Gateways:

| VLAN    | IP Address      |
|---------|-----------------|
| VLAN 10 | 192.168.10.1/24 |
| VLAN 20 | 192.168.20.1/24 |
| VLAN 30 | 192.168.30.1/24 |
| VLAN 40 | 192.168.40.1/24 |

2950 Switch

PC-PT Nurse PC 1 192.168.30.7

PC-PT Nurse PC 2 192.168.30.3

PHONE PT s Phone 1 192.168.30.7

Copy Paste

☐ Top



## Switch 2 CLI:

Switch 2

Physical Config CLI Attributes

IOS Command Line Interface

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

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

Switch>enable
Switch#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name Administration
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name Doctors
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name Nurses
Switch(config-vlan)#exit
Switch(config)#vlan 40
Switch(config-vlan)#name Patients
Switch(config-vlan)#exit
Switch(config)#int range fa0/2-3
Switch(config-if-range)#switchport mode trunk
Switch(config-if-range)#switchport trunk allowed vlan 10,20,30,40
Switch(config-if-range)#exit
Switch(config)#^Z
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface FastEthernet0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan 10,20,30,40
Switch(config-if)#^Z
Switch#
%SYS-5-CONFIG_I: Configured from console by console
```

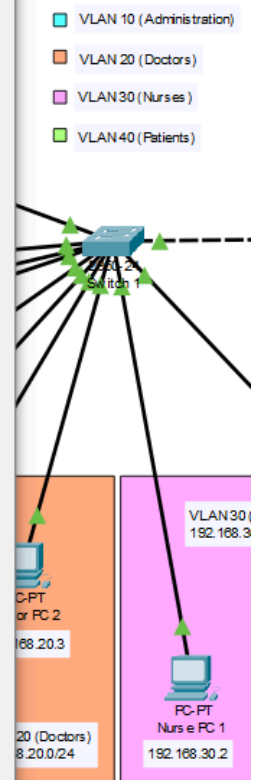
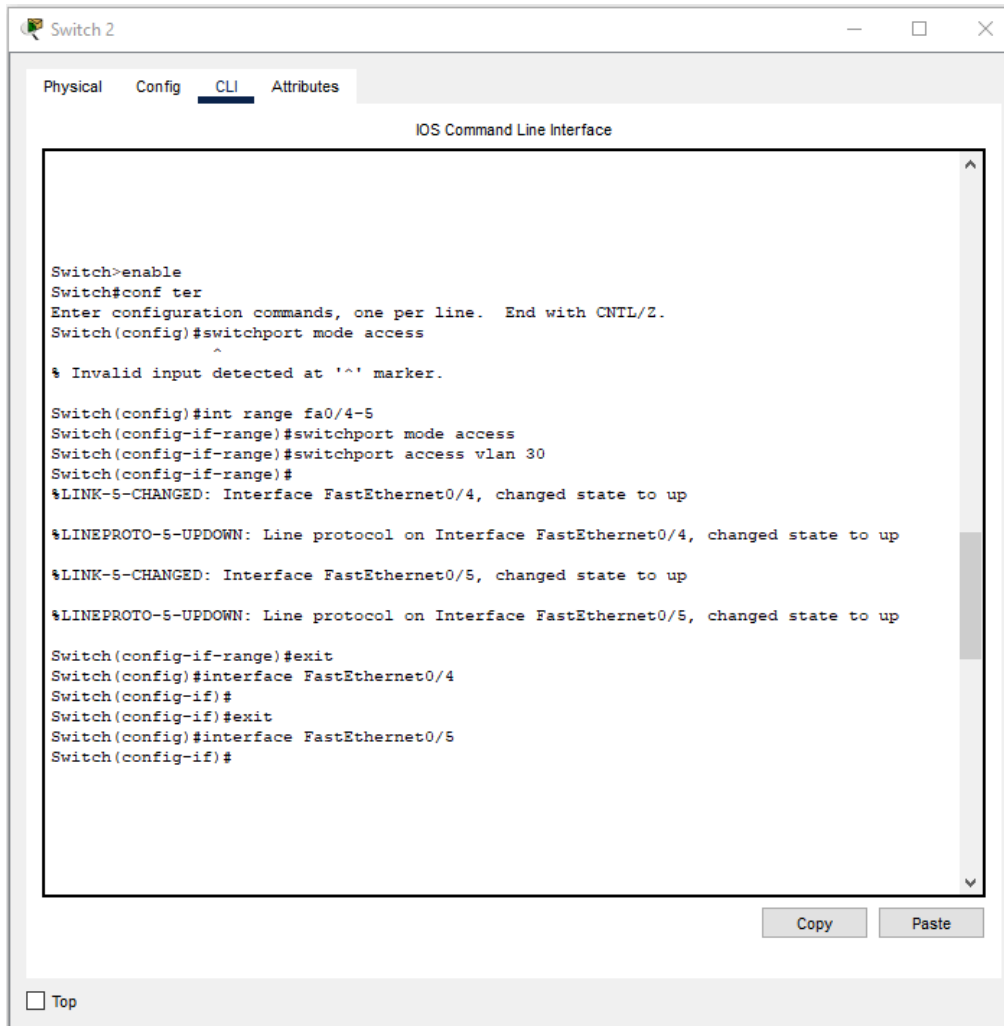
Copy Paste

☐ Top

- VLAN 10 (Administration)
- VLAN 20 (Doctors)
- VLAN 30 (Nurses)
- VLAN 40 (Patients)

PC-PT or PC 2  
192.168.20.3

PC-PT Nurse PC 1  
192.168.30.2



## Switch 3 CLI:

The screenshot shows a network switch configuration window titled "Switch 3" with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the "IOS Command Line Interface". The configuration commands entered are as follows:

```
Press RETURN to get started!

Switch>enable
Switch#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name Administration
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name Doctors
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name Nurses
Switch(config-vlan)#exit
Switch(config)#vlan 40
Switch(config-vlan)#name Patients
Switch(config-vlan)#exit
Switch(config)#
Switch(config)#^Z
Switch#
%SYS-5-CONFIG_I: Configured from console by console
conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int fa0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan 10,20,30,40
Switch(config-if)#exit
Switch(config)#^Z
Switch#
%SYS-5-CONFIG_I: Configured from console by console
conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int fa0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 40
```

Below the CLI window, there is a network diagram. It features a green box labeled "VLAN 40 (Patients) 192.168.40.0/24" connected to a "HomeRouter-PFAQ Patients Wifi". Below this, a cyan box contains two desktop icons: "PC-PT on PC 1" with IP "192.168.10.8" and "PC-PT Reception PC 2" with IP "192.168.10.9".

