

Namal Network

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Date

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Course title

Computer Networks

Mr. Asad Majeed

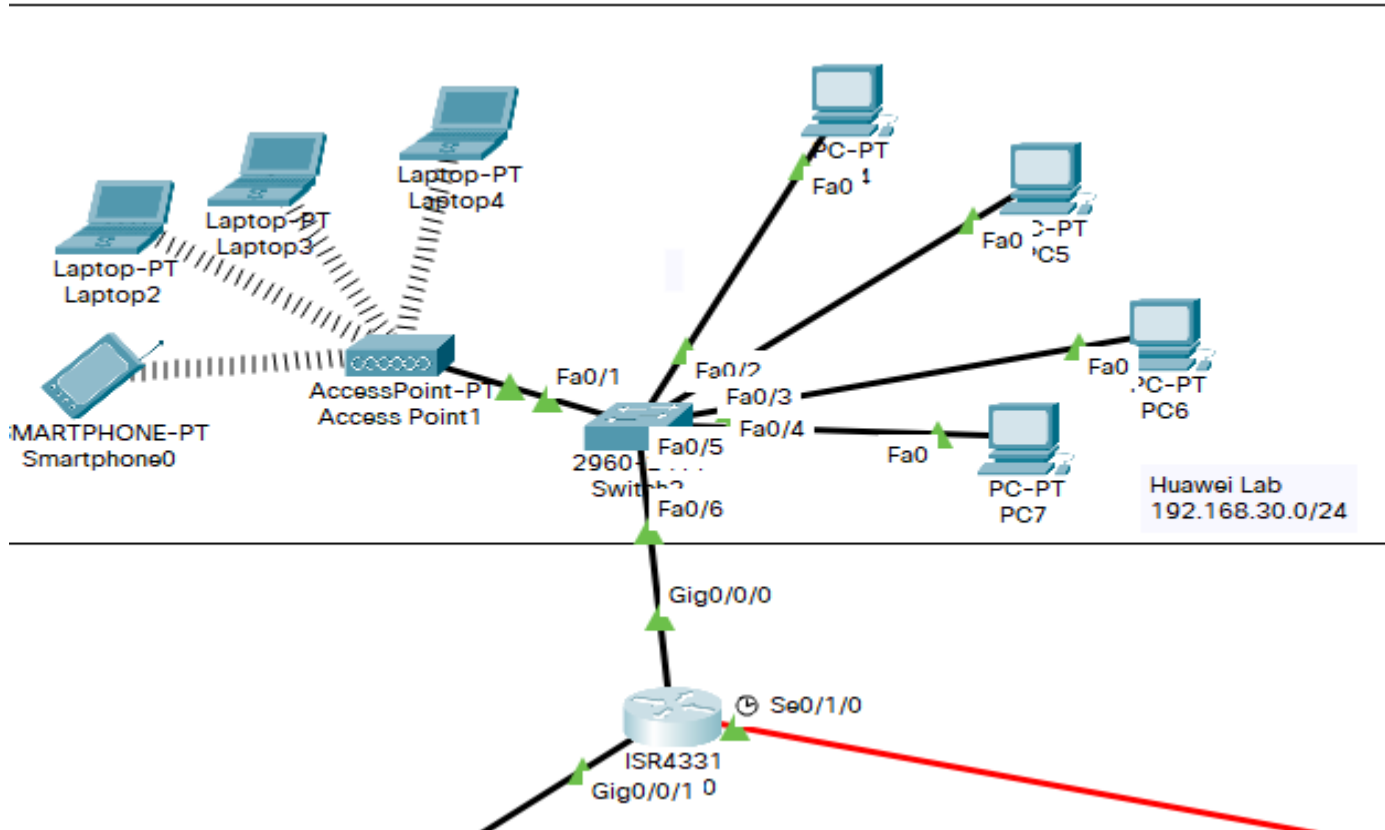
INSTRUCTIONS





THE PROCESS

Huawei Lab Network:



Assigning Password to Wireless access point:

Access Point1

Physical Config Attributes

GLOBAL

Settings

INTERFACE

Port 0

Port 1

Port 1

Port Status ☒ On

SSID cba

2.4 GHz Channel 6

Coverage Range (meters) 140.00

Authentication

☐ Disabled ☒ WEP ☐ WPA-PSK ☐ WPA2-PSK

WEP Key 0987654321

PSK Pass Phrase

User ID

Password

Encryption Type 40/64-Bits (10 Hex digits)

Connecting PC and laptops with Network:

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
cbs	1	79%
abc	1	79%

< >

Site Information

Wireless Mode Infrastructure
Network Type Mixed B/G
Radio Band Auto
Security WEP
MAC Address 00E0.B0D1.0189

Refresh **Connect**

2.4GHz

Adapter is Active

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

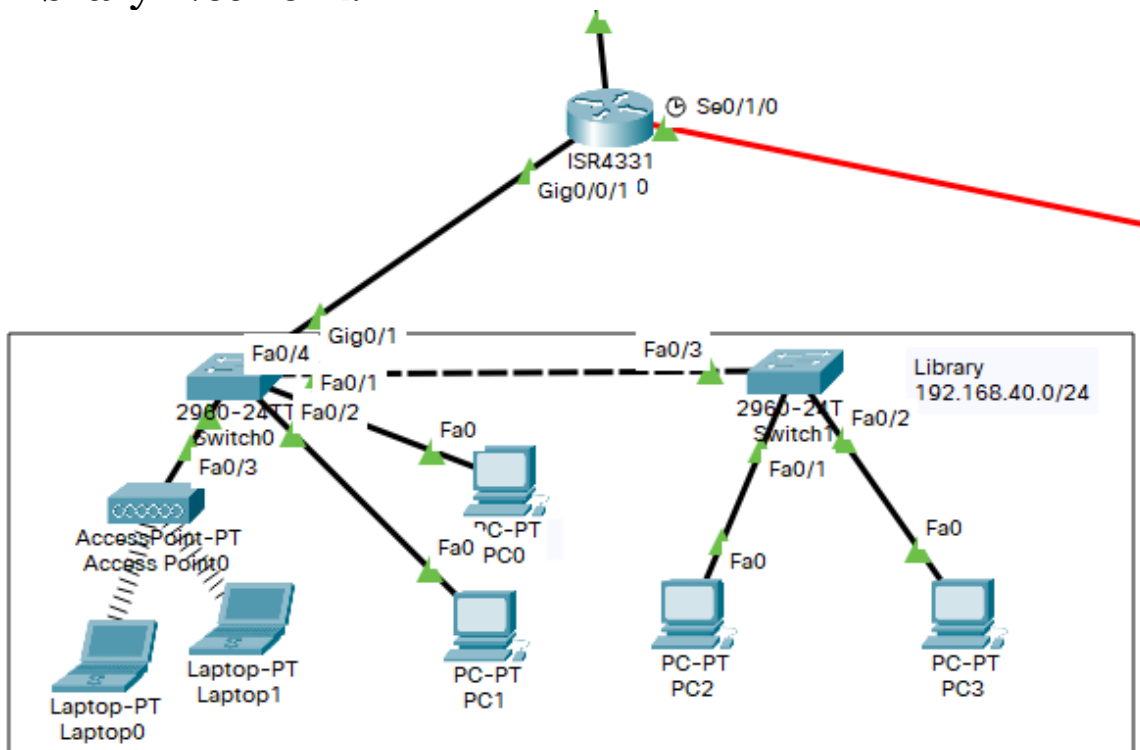
```
Router(config)#int giga
Router(config)#int gigabitEthernet 0/0/0
Router(config-if)#ip add 192.168.30.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0, changed state to up

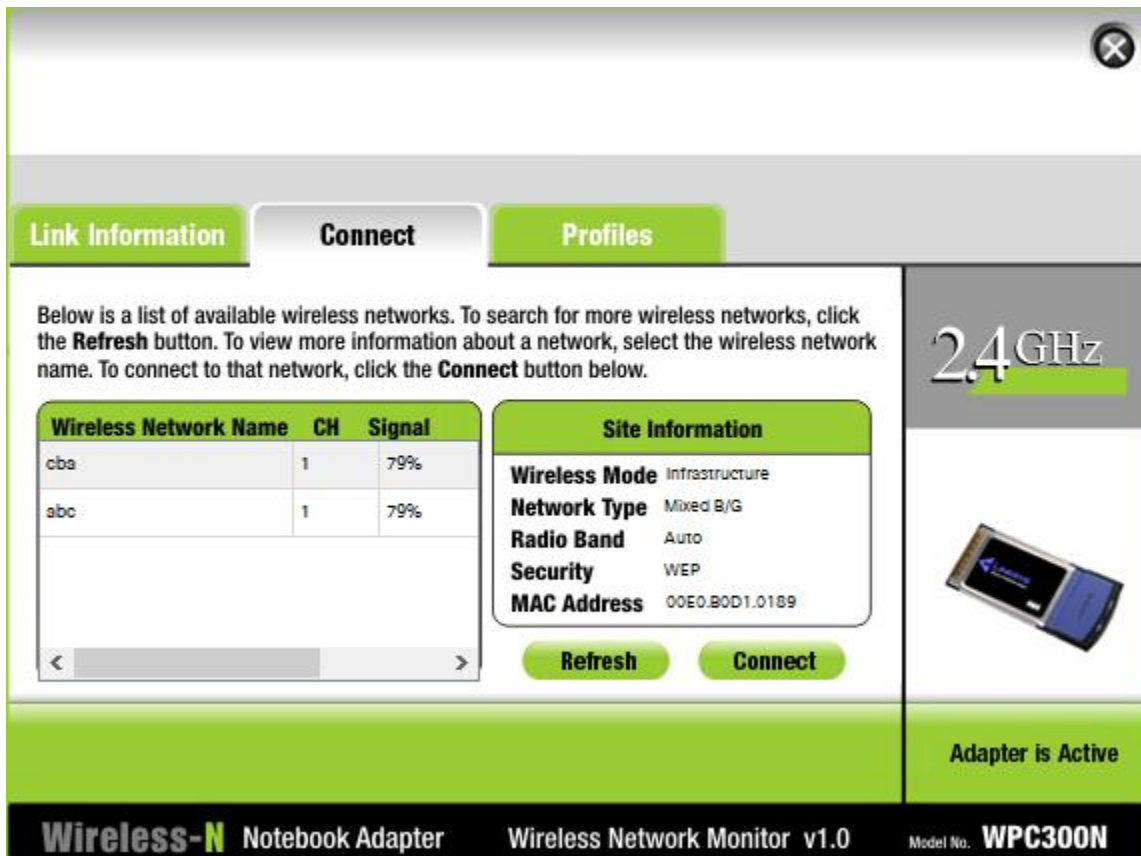
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, changed state to up

Router(config-if)#exit
Router(config)#ip dhcp pool IP30
Router(dhcp-config)#network 192.168.30.0 255.255.255.0
Router(dhcp-config)#default-router %DHCPD-4-PING_CONFLICT: DHCP address conflict: server
pinged
Router(dhcp-config)#default-router 192.168.30.1
Router(dhcp-config)#exit
Router(config)#
```

Library Network:



Connecting PC and laptops with Network:



```

Router#config terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface giga
Router(config)#interface gigabitEthernet 0/0/1
Router(config-if)#ip add
Router(config-if)#ip address 192.168.40.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/1, changed state to up

Router(config-if)#exit
Router(config)#ip dhcp pool IP40
Router(dhcp-config)#network 192.168.40.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.40.1
Router(dhcp-config)#exit
Router(config)%%DHCPD-4-PING_CONFLICT: DHCP address conflict: server pinged

```

Configuration of routers (ports) IP addresses.

Router 2 (port serial 0/1/0)

```

Router#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#inter
Router(config)#interface se
Router(config)#interface serial 0/1/0
Router(config-if)#ip address 20.0.0.2 255.255.255.252
Router(config-if)#no sh
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface Serial0/1/0, changed state to up

```

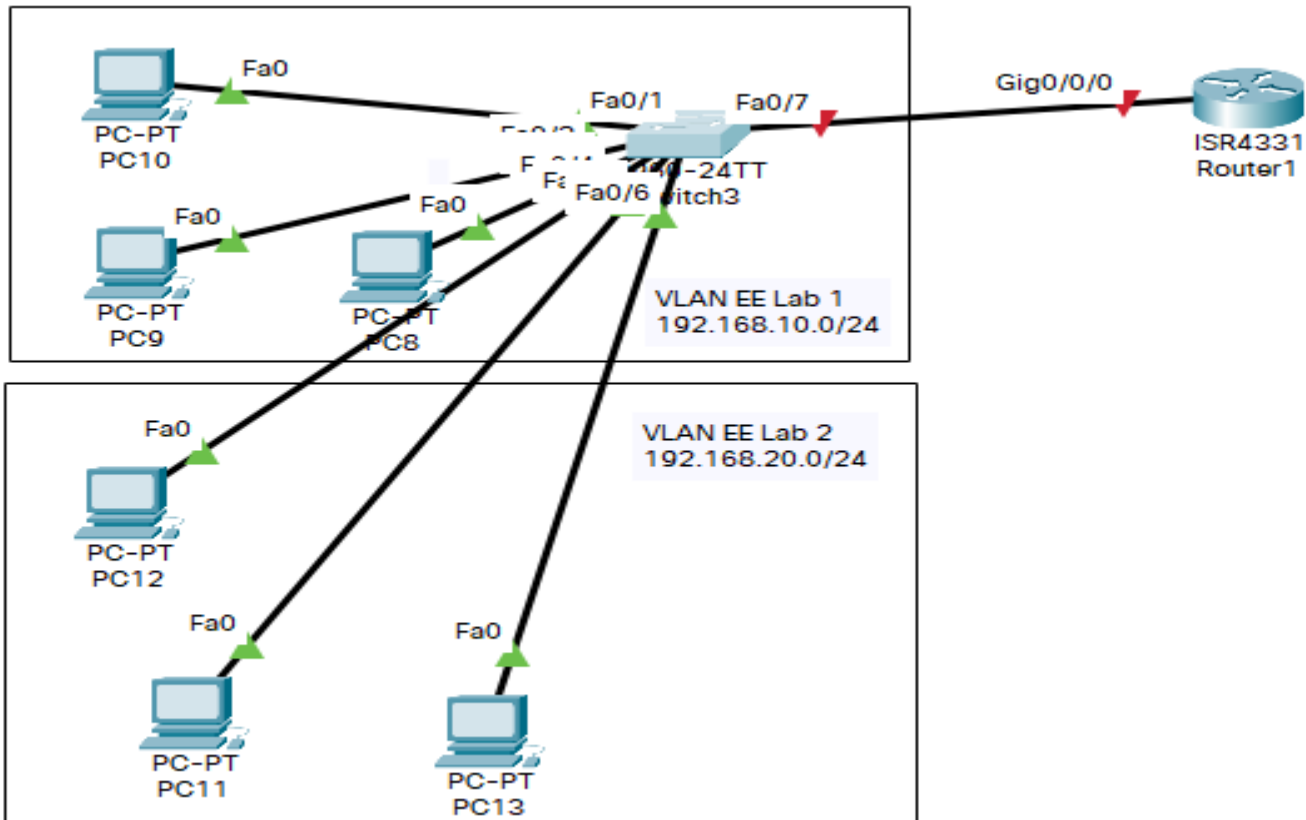
Router o (port serial 0/1/0)

```

Router(config)#in
Router(config)#interface se
Router(config)#interface serial 0/1/0
Router(config-if)#ip address 20.0.0.1 255.255.255.252
Router(config-if)#no s
Router(config-if)#no shu
Router(config-if)#no shutdown

```

EE Labs Network



Configuring VLANS

```
Switch(config)#  
Switch(config)#vlan 10  
Switch(config-vlan)#name eelab1  
Switch(config-vlan)#exit  
Switch(config)#vlan 20  
Switch(config-vlan)#name eelab2  
Switch(config-vlan)#ex  
Switch(config)#  
Switch(config)#end
```

Creating VLANs:


```

Switch#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface
Switch(config)#interface ran
Switch(config)#interface range fas
Switch(config)#interface range fastEthernet 0/1-5
Switch(config-if-range)#swit
Switch(config-if-range)#switchport mod
Switch(config-if-range)#switchport mode acc
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#sw
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#ex
Switch(config)#inter
Switch(config)#interface ran
Switch(config)#interface range fa
Switch(config)#interface range fastEthernet 0/5-10
Switch(config-if-range)#sw
Switch(config-if-range)#switchport mo
Switch(config-if-range)#switchport mode ac
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#sw
Switch(config-if-range)#switchport ac
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#ex

```

Making port 24 Trunk :

```

Switch(config)#interface FastEthernet0/24
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#

```

Router 1 Configuration (IP to router and DHCP configuration):

```

Router(config)#interface gigabitEthernet 0/0/0.10
Router(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.10, changed st
ap

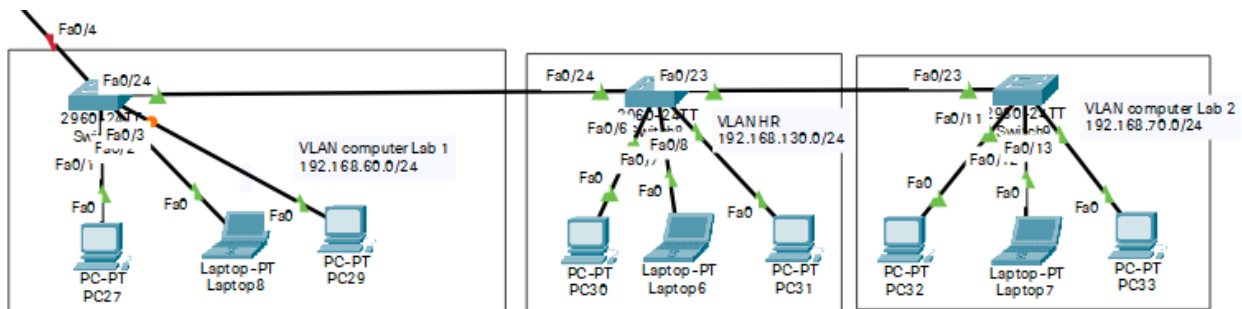
Router(config-subif)#enc
Router(config-subif)#encapsulation do
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#no en
Router(config-subif)#no encapsulation do
Router(config-subif)#no encapsulation dot1Q 10
Router(config-subif)#en
Router(config-subif)#encapsulation do
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip address 192.168.10.1
% Incomplete command.
Router(config-subif)#ip address 192.168.10.1 255.255.255.0
Router(config-subif)#ex
Router(config)#inter
Router(config)#ip dhcp pool vlan10
Router(dhcp-config)#def
Router(dhcp-config)#network 192.168.10.0
% Incomplete command.
Router(dhcp-config)#network 192.168.10.0 255.255.255.0
Router(dhcp-config)#defa
Router(dhcp-config)#default-router 192.168.10.1
Router(dhcp-config)#ex
Router(config)#

Router(config)#interface gigabitEthernet 0/0/0.20
Router(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.20, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.20, changed state
up

Router(config-subif)#enc
Router(config-subif)#encapsulation do
Router(config-subif)#encapsulation dot1Q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#ex
Router(config)#ip dhcp
Router(config)#ip dhcp pool vlan20
Router(dhcp-config)#network 192.168.20.0 255.255.255.0
Router(dhcp-config)#def
Router(dhcp-config)#default-router 192.168.20.1
Router(dhcp-config)#
Router(dhcp-config)#ex
Router(config)#

```



Vlan Configuration:

```
Switch(config)#
Switch(config)#vlan 60
Switch(config-vlan)#name lab1
Switch(config-vlan)#ex
Switch(config)#interf
Switch(config)#interface range fa
Switch(config)#interface range fastEthernet 0/1-5
Switch(config-if-range)#swi
Switch(config-if-range)#switchport a
Switch(config-if-range)#switchport mode ac
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#swi
Switch(config-if-range)#switchport ac
Switch(config-if-range)#switchport access vlan 60
Switch(config-if-range)#ex
Switch(config)#vlan 70
Switch(config-vlan)#name hr
Switch(config-vlan)#ex
Switch(config)#inter
Switch(config)#interface ranngge fas
Switch(config)#interface range
Switch(config)#interface range fas
Switch(config)#interface range fastEthernet 0/6-10
Switch(config-if-range)#switch
Switch(config-if-range)#switchport mod
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 70
Switch(config-if-range)#ex
Switch(config)#
Switch(config)#vlan 130
Switch(config-vlan)#name lab2
Switch(config-vlan)#ex
Switch(config)#inter
Switch(config)#interface fas
Switch(config)#interface fastEthernet 0/11-15
Switch(config)#interface fastEthernet 0/11-15
Switch(config-if-range)#swi
Switch(config-if-range)#switchport mode ac
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#swi
Switch(config-if-range)#switchport ac
Switch(config-if-range)#switchport access vlan 130
Switch(config-if-range)#ex
Switch(config)#interface FastEthernet0/24
Switch(config-if)#
Switch(config-if)#switchport mode trunk
```

```

Router(config)#interface G0/0/0.60
Router(config-subif)#description Default Gateway for VLAN 60
Router(config-subif)#enc
Router(config-subif)#encapsulation dot
Router(config-subif)#encapsulation dot1Q 60
Router(config-subif)#ip add 192.168.60.1 255.255.255.0
Router(config-subif)#exit
Router(config)#interface G0/0/0.130
Router(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.130, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.130, changed state
to up
encapsulation dot1Q 60

%Configuration of multiple subinterfaces of the same main
interface with the same VID (60) is not permitted.
This VID is already configured on GigabitEthernet0/0/0.60.

Router(config-subif)#description Default Gateway for VLAN 130
Router(config-subif)#encapsulation dot1Q 130
Router(config-subif)#ip add 192.168.130.1 255.255.255.0
Router(config-subif)#exit
Router(config)#interface G0/0/0.70
Router(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0/0.70, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.70, changed state to
up

Router(config-subif)#description Default Gateway for VLAN 70
Router(config-subif)#encapsulation dot1Q 70
Router(config-subif)#ip add 192.168.70.1 255.255.255.0
Router(config-subif)#exit
Router(config)#
Router(config)#interface G0/0/0
Router(config-if)#description Trunk link to S1
Router(config-if)#no shut
Router(config-if)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console
|

```

IP assigning By DHCP:

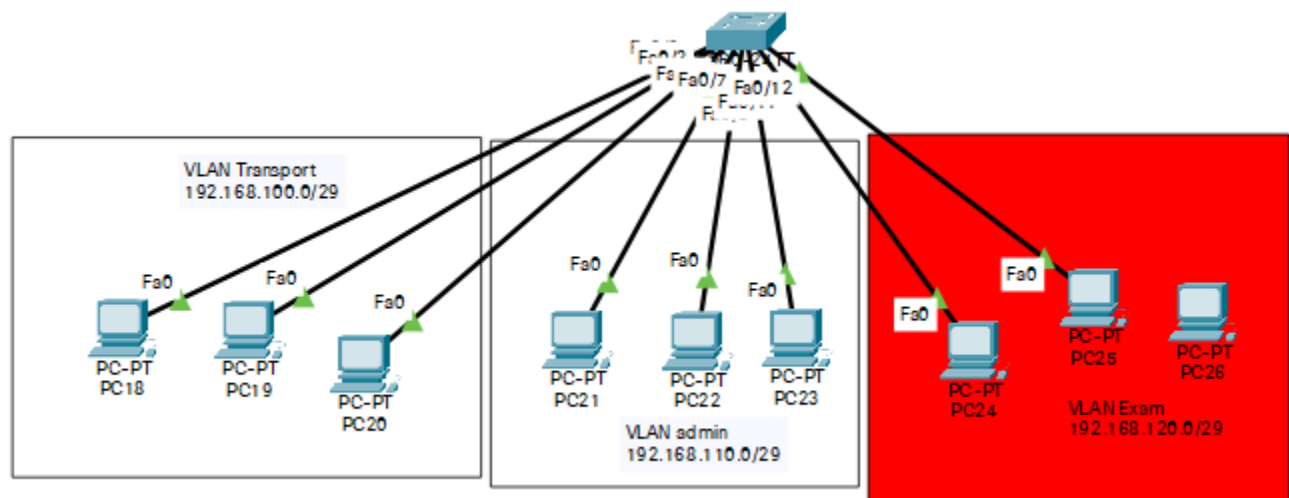
```

Router(config)#ip dhcp pool lab1
Router(dhcp-config)#network 192.168.60.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.60.1
Router(dhcp-config)#ex
Router(config)%%DHCPD-4-PING_CONFLICT: DHCP address conflict:  server pinged
192.168.60.1.

Router(config)#
Router(config)#ip dhcp pool hr
Router(dhcp-config)#netwo
Router(dhcp-config)#network 192.168.130.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.130.1
Router(dhcp-config)#ex
Router(config)#
Router(config)#
Router(config)#ip dhcp pool lab2
Router(dhcp-config)#defau
Router(dhcp-config)#default-router 192.168.70.1
Router(dhcp-config)#network 192.168.70.0 255.255.255.0
Router(dhcp-config)#ex
Router(config)%%DHCPD-4-PING_CONFLICT: DHCP address conflict:  server pinged
192.168.70.1.

```

Transport, Admin & Exam Network:



Vlan Configuration:

```
Switch#conf
Switch#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#vlan 100
Switch(config-vlan)#name transport
Switch(config-vlan)#inter
Switch(config-vlan)#exit
Switch(config)#inter
Switch(config)#interface ran
Switch(config)#interface range fast
Switch(config)#interface range fastEthernet 0/1-5
Switch(config-if-range)#swi
Switch(config-if-range)#switchport mode
Switch(config-if-range)#switchport mode acc
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#swi
Switch(config-if-range)#switchport acc
Switch(config-if-range)#switchport access vl
Switch(config-if-range)#switchport access vlan 100
Switch(config-if-range)#exit
Switch(config)#vlan 110
Switch(config-vlan)#name admin
Switch(config-vlan)#interface range fastEthernet 0/6-10
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 110
Switch(config-if-range)#exit
Switch(config)#vlan 120
Switch(config-vlan)#name exam
Switch(config-vlan)#exit
Switch(config)#interface range fastEthernet 0/11-15
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 120
Switch(config-if-range)#exit
```

Assigning Trunk port:

```
Switch(config)#interface FastEthernet0/24
Switch(config-if)#
Switch(config-if)#switchport mode trunk
Switch(config-if)#
```

Deny access to pc:

```

Router>enable
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#no ip access-list standard 20
Router(config)#ip access-list standard 30
Router(config-std-nacl)#deny 192.168.10.0 0.0.0.255
Router(config-std-nacl)#deny 192.168.20.0 0.0.0.255
Router(config-std-nacl)#deny 192.168.30.0 0.0.0.255
Router(config-std-nacl)#deny 192.168.40.0 0.0.0.255
Router(config-std-nacl)#deny 192.168.50.0 0.0.0.255
Router(config-std-nacl)#deny 192.168.60.0 0.0.0.255
Router(config-std-nacl)#deny 192.168.70.0 0.0.0.255
Router(config-std-nacl)#deny 192.168.100.0 0.0.0.255
Router(config-std-nacl)#deny 192.168.130.0 0.0.0.255
Router(config-std-nacl)#deny 192.168.100.0 0.0.0.7
Router(config-std-nacl)#deny 192.168.110.0 0.0.0.7
Router(config-std-nacl)#deny 1.0.0.0 0.0.0.7
Router(config-std-nacl)#permit any
Router(config-std-nacl)#ex
Router(config)#inter
Router(config)#interface gi
Router(config)#interface gigabitEthernet 0/0/1.120
Router(config-subif)#ip acc
Router(config-subif)#ip access-group 30 out
Router(config-subif)#ex
Router(config)#write mem
Router(config)#ex
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#wr
Router#write m
Router#write memory
Building configuration...

Router#
Router#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#inter
Router(config)#interface gi
Router(config)#interface gigabitEthernet 0/0/1.120
Router(config-subif)#ip acc
Router(config-subif)#ip access-group 30 in
Router(config-subif)#ex
Router(config)#

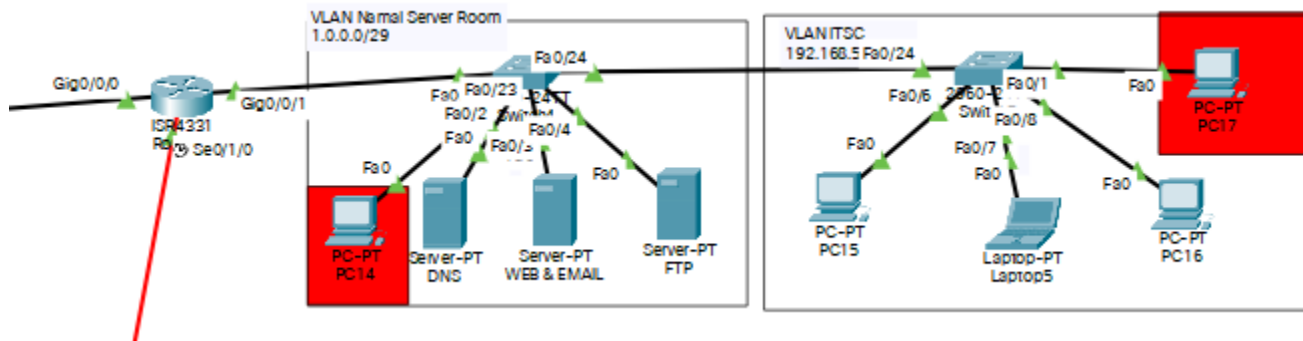
```

Router 2 Configuration at port o/o/1:

```
Router#conf terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface giga
Router(config)#interface gigabitEthernet 0/0/1.100
Router(config-subif)#desc
Router(config-subif)#description def
Router(config-subif)#description Default Gateway for VLAN 100
Router(config-subif)#enc
Router(config-subif)#encapsulation do
Router(config-subif)#encapsulation dot1Q 100
Router(config-subif)#ip add 192.168.100.1 255.255.255.0
Router(config-subif)#exit
Router(config)#interface gigabitEthernet 0/0/1.110
Router(config-subif)#description Default Gateway for VLAN 110
Router(config-subif)#encapsulation dot1Q 110
Router(config-subif)#ip add 192.168.110.1 255.255.255.0
Router(config-subif)#exit
Router(config)#interface gigabitEthernet 0/0/1.120
Router(config-subif)#description Default Gateway for VLAN 120
Router(config-subif)#encapsulation dot1Q 120
Router(config-subif)#ip add 192.168.120.1 255.255.255.0
Router(config-subif)#exit
Router(config)#interface G0/0/1
Router(config-if)#desc
Router(config-if)#description Defau
Router(config-if)#description Trunk link to S1
Router(config-if)#no shut

Router(config)#inter
Router(config)#interface i
Router(config)#interface gi
Router(config)#interface gigabitEthernet 0/0/1.110
Router(config-subif)#ip dhcp pool admin
Router(dhcp-config)#network 192.168.110.0 255.255.255.248
Router(dhcp-config)#def
Router(dhcp-config)#default-router 192.168.110.1
Router(dhcp-config)#ex
Router(config)#inter
Router(config)#interface gig
Router(config)#interface gigabitEthernet 0/0/1.110
Router(config-subif)#ip dhcp pool admin
Router(dhcp-config)#ex
Router(config)#ip dhcp pool admin
Router(dhcp-config)#network 192.168.110.0 255.255.255.248
Router(dhcp-config)#default-router 192.168.110.1
Router(dhcp-config)#ex
Router(config)#ip dhcp pool exam
Router(dhcp-config)#network 192.168.120.0 255.255.255.248
Router(dhcp-config)#defa
Router(dhcp-config)#default-router 192.168.120.1
Router(dhcp-config)#
Router(dhcp-config)#ex
Router(config)#ip dhcp pool exam
Router(dhcp-config)#network 192.168.120.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.120.1
Router(dhcp-config)#ex
Router(config)#%DHCPD-4-PING_CONFLICT: DHCP address conflict:  server pinged
192.168.120.1.
%DHCPD-4-PING_CONFLICT: DHCP address conflict:  server pinged 192.168.120.1.
```

Server Room & ITSC Network:



Vlan Configuration:

```
Switch>enable
Switch#conf ter
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 1
Switch(config-vlan)#name serverRoom
Default VLAN 1 may not have its name changed.
Switch(config-vlan)#exit
Switch(config)#interface
Switch(config)#interface range
Switch(config)#interface range fas
Switch(config)#interface range fastEthernet 0/1-5
Switch(config-if-range)#sw
Switch(config-if-range)#switchport mod
Switch(config-if-range)#switchport mode acc
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#sw
Switch(config-if-range)#switchport acc
Switch(config-if-range)#switchport access vlan
Switch(config-if-range)#switchport access vlan 1
Switch(config-if-range)#exit
Switch(config)#vlan 50
Switch(config-vlan)#name itsc
Switch(config-vlan)#exit
Switch(config)#interface range fastEthernet 0/6-10
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 50
Switch(config-if-range)#exit
Switch(config)#
```

Trunk Port assigning:

```
Switch(config)#interface FastEthernet0/24
Switch(config-if)#
Switch(config-if)#switchport mode trunk
```

Deny access to pc:

```

Router#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#access
Router(config)#access-list 2 deny 1.0.0.5
Router(config)#access-list 2 deny 1.0.0.6
Router(config)#access-list 2 permit any
Router(config)#interfac
Router(config)#interface gig
Router(config)#interface gigabitEthernet 0/0/1.1
Router(config-subif)#ip acce
Router(config-subif)#ip access-group 2 in
Router(config-subif)#ex

```

Assigning IPS to ITSC Network by DHCP:

```

Router#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip dhcp pool itsc
Router(dhcp-config)#network 192.168.50.0 255.255.255.0
Router(dhcp-config)#defa
Router(dhcp-config)#default-router 192.168.50.1
Router(dhcp-config)#ex

```

Email username	Password
Aliraza2020	12345
Hammad2019	12345
Abrar2020	12345

FTP username	Password
<u>abrar</u>	<u>abrar</u>
<u>hammad</u>	<u>hammad</u>
<u>ali</u>	<u>ali</u>

Physical Config **Services** Desktop Programming Attributes**SERVICES**

HTTP

DHCP

DHCPv6

TFTP

DNS

SYSLOG

AAA

NTP

EMAIL

FTP

IoT

VM Management

Radius EAP

FTP

Service

☒ On☐ Off

User Setup

Username Password ☐ Write☐ Read☐ Delete☐ Rename☐ List

	Username	Password	Permission
1	abrar	abrar	RWDNL
2	ali	ali	RWDNL
3	cisco	cisco	RWDNL
4	hammad	hammad	RWDNL

Add

Save

Remove

File

- 1 abrar.txt
- 2 aliraza.txt
- 3 hammad.txt

Remove

☐ Top