

EXP - 8  
DATE - 16/09/2024  
CONFIGURATION OF WIRELESS LAN  
USING CISCO PACKET TRACER

### Aim

To configure a wireless lan topology with three PC's connected from Linksys wireless routers

### METHODOLOGY:

1) Configure static IP on PC cards  
wireless router

2) Set SSID to mother network

3) Set IP address of router to

192.168.0.1 PLC to 168.0.2, PL1 to  
192.168.0.3 and PL2 to 192.168.0.4

4) Secure your network by  
configuring wireless key on router

5) connect PC by using WEP key

### PROCEDURE

Step 1 : click on the wireless Router

i) set username, password to admin  
and default SSID to mother network

ii) select wireless security and  
change security mode to WEP

iii) set key to 0123456789

iv) configure static IP on all  
three PC's

	IP	Subnet Mask	Default Gateway
PC	20 192.168.0.2	255.255.255.0	192.162.6.1
PCD		255.255.255.0	192.168.0.1
PL 1	192.168.0.3		
PL2	192.168.0.4	255.255.255.0	192.168.0.1

Step 2 connect PC from wireless router

i) click on ant select position

click on PC wireless

ii) click on connect

iii) observation of signal strength

and WEP security is seen

iv) click connect button to connect

Motherboard

v) it will ask for WEP key

insert 0123456789

vi) It will connect you with

wireless router and we can

see the system is connected

Step 3: Repeat the same for PL1 & PL2

Laptops - WRT-300N

wireless Router D

## student observations

Q what is SSID of wireless router?  
The SSID (Service set identifier) is the name that identifies a wireless network when you search for available wifi networks on your device. The list of networks name displayed represents SSIDs of nearby wireless routers.

2) what is the security key in a wireless network?  
A security key is the password used to protect a wireless network ensuring only authorized device can connect. Commonly used wireless WPA2 and WPA3.

3) configure a simple wireless LAN in your lab using lab using a real access point and write down configuration in your notes.

Q Access the Router interface:

- 1) connect your laptop or PC via Ethernet.
- 2) open a web browser and enter IP address 192.168.1.1
- 3) configure the SSID  
i.e. Set SSID (e.g.: 'lab-WPA2')

- 3) Choose a wireless channel  
 (11) set auto or manual
- 4) set security as other  
 (i) wireless open network (WPA2 PSK)  
 (ii) create a password ("12345678")
- 5) Assign DHCP server what  
 automatically connect to  
 wireless network
- 6) Save the settings and reboot  
 the router or access point if  
 necessary configuration

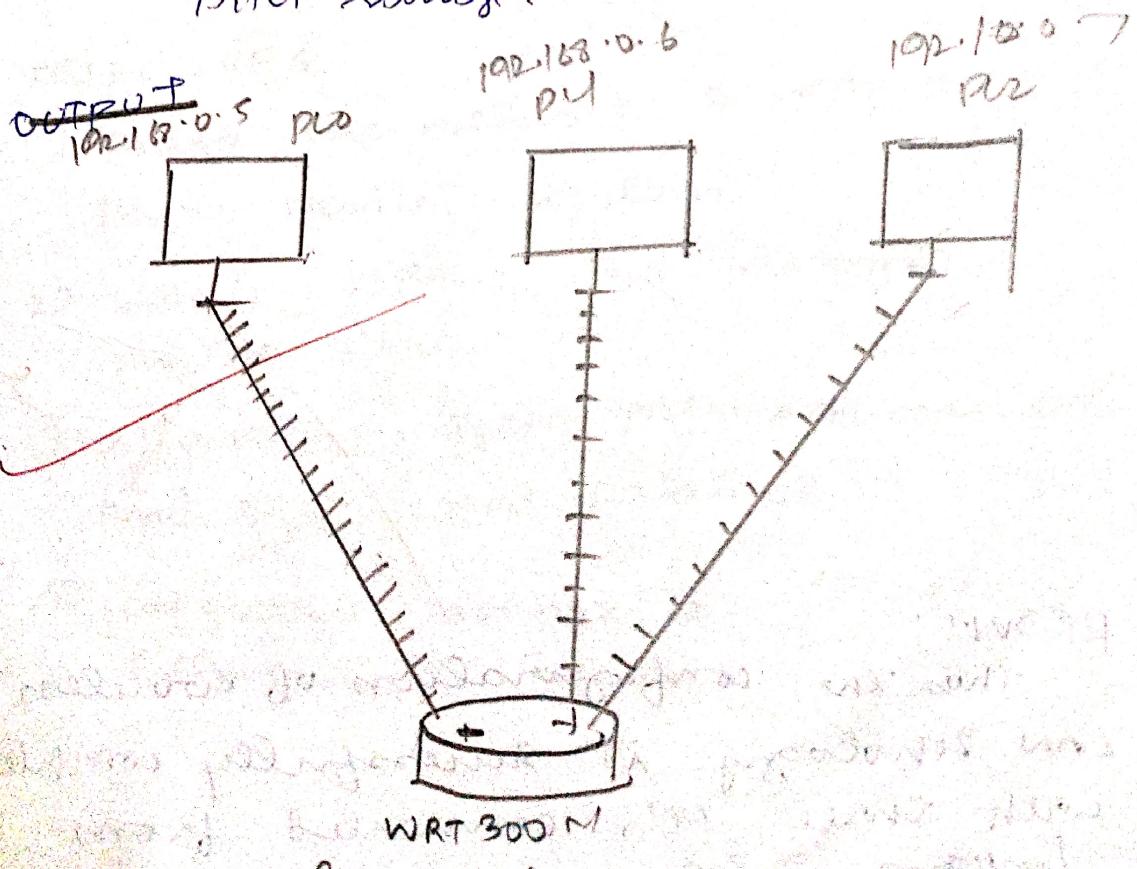
SSID lab - config

channel auto

security : WPA2 - PSK

security key: lab12345

DHCP range: 192.168.1.10-192.168.1.100



OUTPUT

Thus the path could be transmitted  
via wireless route.

Time	Last seen	source	Destination	Type	Time period	No.
0	successful	PCO	PL2	ICMP D	0.000	N 0
0	successful	PL1	PCO	ICMP D	0-56	N 1

RESULT:

This configuration of wireless LAN topology is successfully completed with three PCs connected from two wireless routers.

PROCESS : SIMULATE VIRTUAL LAN  
 BY EXP NO: 8B  
 DATE - 13/09/2024  
 CISCO PACKET TRACER

AIM : To simulate a virtual LAN using Cisco packet configuration using Cisco packet tracer.

Tracer

#### ADDRESSING TABLE

Device Interface	IP address	Subnet Mask	Default gateway
S1 VLAN 1	192.168.1.11	255.255.255.0	N/A
S2 VLAN 1	192.168.1.12	255.255.255.0	N/A
PC-A N1	192.168.1.03	255.255.255.0	192.168.1.1
PC-B N2	192.168.1.04	255.255.255.0	192.168.1.1

#### OBJECTIVES

- 1) Build the network & configure basic device system
- 2) Create VLAN's and assign switch ports
- 3) Maintain VLAN port assignment and the VLAN database
- 4) Configure an 802.1Q Trunk between the switches

## PROCESS

- D Build the network & configure basic Devi system
- D Build the network as shown in the topology
  - a) As in figure place devi and aray both switch to RACK
  - b) Drag PC-A & PC-B to table and using power button turn on
  - c) provide network connection by connect straight through cable
- 2) connect consel cable from devi PC-A to S1 & PC-B to S2
- 3) configue the basic setting for each switch
  - a) use terminal to consel in each switch and firstly enter configuration mode
  - b) Assign a device name to each switch and class as password and class as consol password and same user & vity password and encrypt plain text & passwords

- ① configure the IP address entries in the addressing table for WLANs on switches
- ② shut down all the interfaces that will not be used and set clock on the each switch
- ③ save the running configuration
- ④ configure PC hosts
  - From the Aerohive tab on each PC, click IP configuration and enter the addressing information as displayed in the addressing table
- ⑤ test connections:
  - Test network connectivity by attempting to ping between each of the cabled device
- ⑥ create VLANs and assign switch ports
  - ⑦ create VLAN's on the switches
    - use terminal to config both network switches
    - create VLANs on S,
    - create the same VLAN's on S
    - issue the show vlan brief command.

- 2) Assign VLANs  
with interfaces
- a) Assign VLANs to the interface  
on S1, assign PC-A to operator  
VLAN
- s1 config # interface fo 16  
s1 config-if # switchport mode  
access  
s1 config-if # switchport access  
VLAN16

from VLAN 1, remove the management  
address and configure it

s1 config # interface VLAN1

s2 config-if # no ip address

s1 config-ip # interface VLAN1

s1 config-ip # ip address 192.168.1.11  
255.255.255.0

s1 config-if # enable

b) Issue show vlan brief command  
and verify VLANs are assigned  
to correct interfaces

c) Issue the show ip interfaces  
brief command

d) Assign PC-B to the operator  
VLAN on S2

e) from VLAN 1 remove IP address  
and configure it on VLAN  
99 according to the  
addressing table

f) Issue show vlan brief command  
to verify VLANs are assigned

③ Maintain VLAN Port Assignment  
and the VLAN Database

- D Assign or VLAN to multiple interfaces  
use terminal config mode both network  
switches
- a) Assign interfaces F0/1 - 24 to VLAN 99
  - b) Issue the show vlan brief command  
to verify VLAN assignments
  - c) Reassign F0/1 and F0/24 to VLAN 10
  - d) Verify the VLAN assignments  
are correct
- 2) Remove a VLAN assignment  
from an interface
- a) Use no switchport access  
VLAN command to remove VLAN 1099  
assignment to F0/24
  - b) Verify that the VLAN  
change was made
- 3) Remove a VLAN ID from the  
VLAN database
- a) Add VLAN 30 to interface F0/24  
without issuing the global  
VLAN command
  - b) Verify that the new VLAN is  
displayed in the VLAN table
- c) Use the no vlan 30 command  
to remove VLAN 30 from the  
VLAN database
- d) Issue the show vlan brief command  
F0/24 was assigned to VLAN 30

2) on interface Fo/24 issue the  
no switch port access vlan  
command

3) issue the show ran brief  
command to determine the  
VLAN assignment for  
Fo/24

4) configuring an 802.1Q trunk  
between the switches.

5) use DTP to initiate Trunking  
on Fo/1

2) on S1 and S2 issue the  
show vlan brief command

3) Issue the show interfaces  
trunk command to  
view switched interfaces

4) verify the VLAN traffic  
is travelling over trunk  
interface Fo/1

5) manually configure trunk  
interface Fo/1

6) on interface Fo/1, change  
the switch port mode to  
force trunking, make sure  
to do this on both switches

7) Issue the show interface  
trunk command to view  
the trunk mode

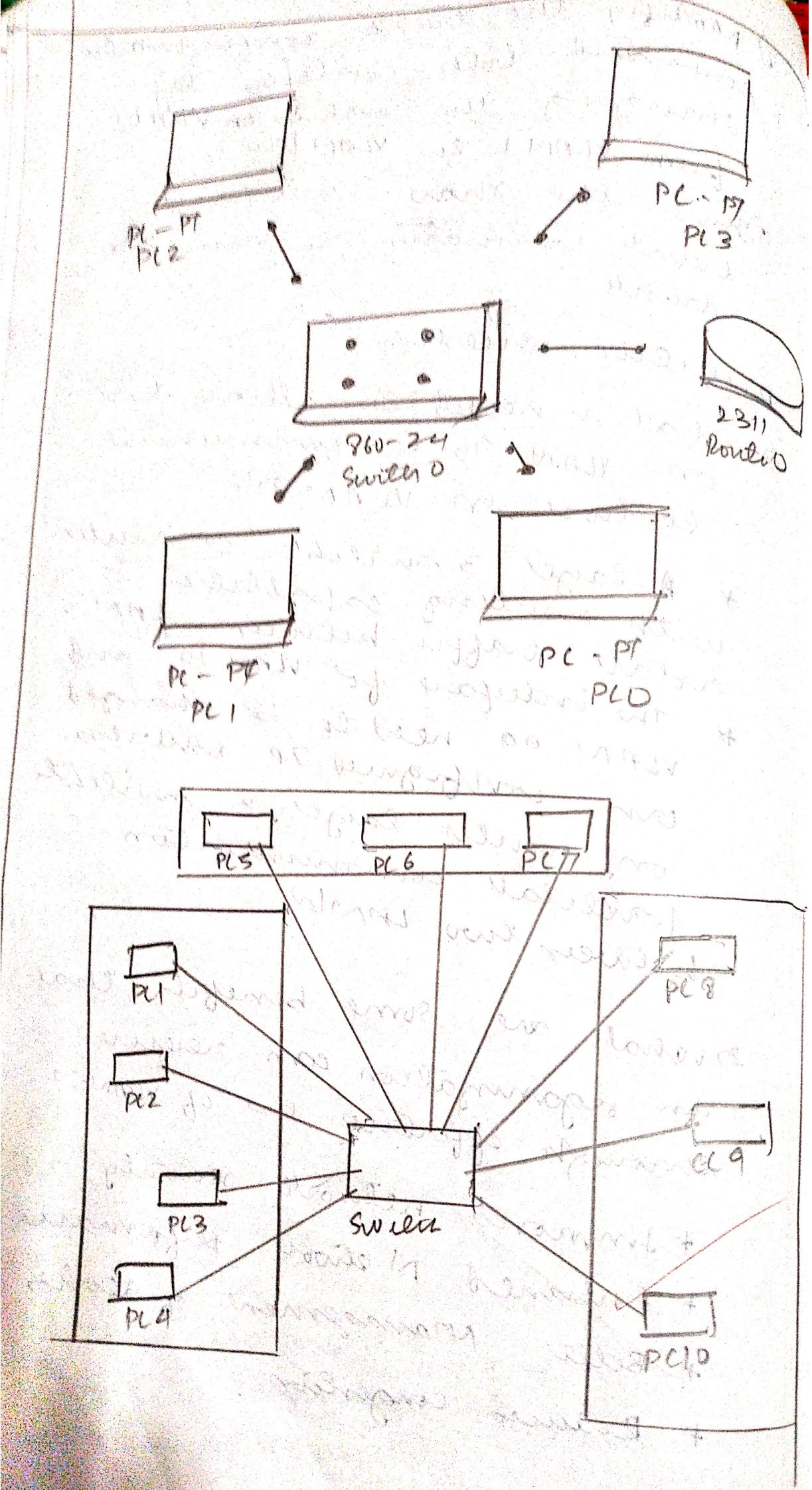
- ② Modify the trunk configuration command both switches by changing the native VLAN from VLAN 1 to VLAN 1000
- ③ Run the show interface trunk command to view the trunk

Reflection question

- ▷ What is needed to allow host on VLAN 10 to communicate to host on VLAN 90?
  - \* A layer 3 switch or router with routing capabilities to route traffic between LAN's
  - \* The interface for VLAN 10 and VLAN 90 need to be changed or configured IP address on router layer 3 switch to facilitate communication between two LAN's

- ▷ What are some benefits that an organization can receive through effective use of VLAN's?

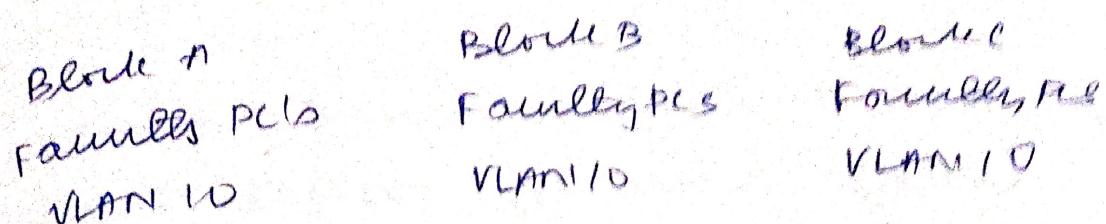
- ~~\* Improves network security~~
- ~~\* Enhanced Network performance~~
- ~~\* Better management of services~~
- \* Reduces congestion



# Student Observation

a) draw and label VLAN (for 6.6)

To visualize the VLAN network,  
imagine three blocks (A, B, C) with  
10 faculty members on it.



Robotics Department switch (M1110)  
other switches (optional)

b) show IP configuration for each device

Device	IP address	Subnet mask	Gateway VLAN
PC-1	192.168.10.2	255.255.255.0	192.168.10.1      VLAN 10
PC-2	192.168.10.3	255.255.255.0	(192.168.10.1)      VLAN 10
PC-3	192.168.10.4	255.255.255.0	192.168.10.1      VLAN 10
PC-4	192.168.10.5	255.255.255.0	192.168.10.1      VLAN 10
PC-5	192.168.10.6	255.255.255.0	192.168.10.1      VLAN 10
PC-6	192.168.10.7	255.255.255.0	192.168.10.1      VLAN 10

c) Write the command used (for)

VLAN configuration in switch

switch > enable

✓ switch #1 config terminal

switch (config) #1 name CSC

switch Config#1 interface range f0/1-10

switch (config) #1 switch port mode access

switch config) 11 interfaces  
switch config 211 up address 102.48.10.  
255.255.255.0

switch (Cognac) & no shutters

switch config) enable

## RESULT:

thus is a virtual LAN configuration.  
our simulation using win packet  
tracer is successful. Every frame is  
and output is verified.