INFORMATION SECURITY MANAGEMENT(CSE3052)

DIGITAL ASSIGNMENT-1

VIGNESH CP

19BCE0432

EXPERIMENT-1

TITLE:

Connecting to Vlans.

AIM:

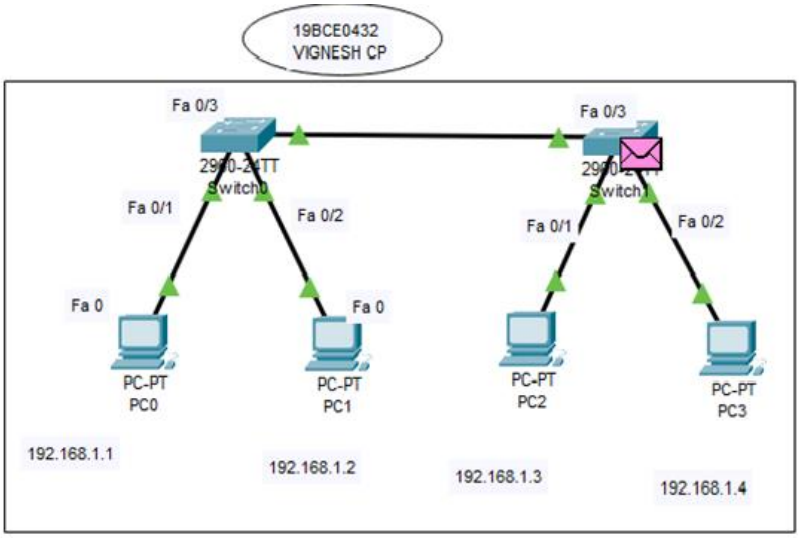
To Connect two different VLANS using switches.

PROCEDURE:

1) Enable routing on the switch with the **ip routing** command. Even if IP routing was previously enabled, this step ensures that it is activated.
2) Make note of the VLANs that you want to route between. In this example, you want to route traffic between VLANs 2, 3 and 10.
3) Determine the IP addresses you want to assign to the VLAN interface on the switch. For the switch to be able to route between the VLANs, the VLAN interfaces must be configured with an IP address. When the switch receives a packet destined for another subnet/VLAN, the switch looks at the routing table in order to determine where to forward the packet. The packet is then passed to the VLAN interface of the destination. It is in turn sent to the port where the end device is attached.
4) Configure the default route for the switch.
5) Configure your end devices to use the respective Catalyst 3550 VLAN interface as their default gateway. For example, devices in VLAN 2 should use the interface VLAN 2 IP address as its default gateway. Refer to the appropriate client configuration guide for more information on how to designate the default gateway.

SCREEN SHOT:

TOPOLOGY



CLI COMMAND’s

Switch0

Physical Config CLI Attributes

```
63488K bytes of flash-simulated non-volatile configuration memory.
Base ethernet MAC Address       : 000A.41D7.66EC
Motherboard assembly number     : 73-9832-06
Power supply part number        : 341-0097-02
Motherboard serial number       : FOC103248MJ
Power supply serial number      : DCA102133JA
Model revision number           : B0
Motherboard revision number     : C0
Model number                    : WS-C2960-24TT
System serial number            : FOC1033Z1EY
Top Assembly Part Number        : 800-26671-02
Top Assembly Revision Number    : B0
Version ID                      : V02
CLEI Code Number                : COM3K00BRA
Hardware Board Revision Number  : 0x01


Switch   Ports  Model              SW Version            SW Image
------   -----  -----              ----------            ----------
*    1   26     WS-C2960-24TT      12.2                  C2960-LANBASE-M

Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version 12.2(25)FX, RELEASE SOFTWARE (fc1)
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Compiled Wed 12-Oct-05 22:05 by pt_team

Press RETURN to get started!


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

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

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

%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


Switch>en
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface vlan1
Switch(config-if)#hostname s1
s1(config)#interface vlan1
s1(config-if)#ip address 10.0.0.1 255.0.0.0
s1(config-if)#no shut

s1(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

s1(config-if)#exit
s1(config)#exit
s1#
%SYS-5-CONFIG_I: Configured from console by console
```

Ctrl+F6 to exit CLI focus

Top

Switch1

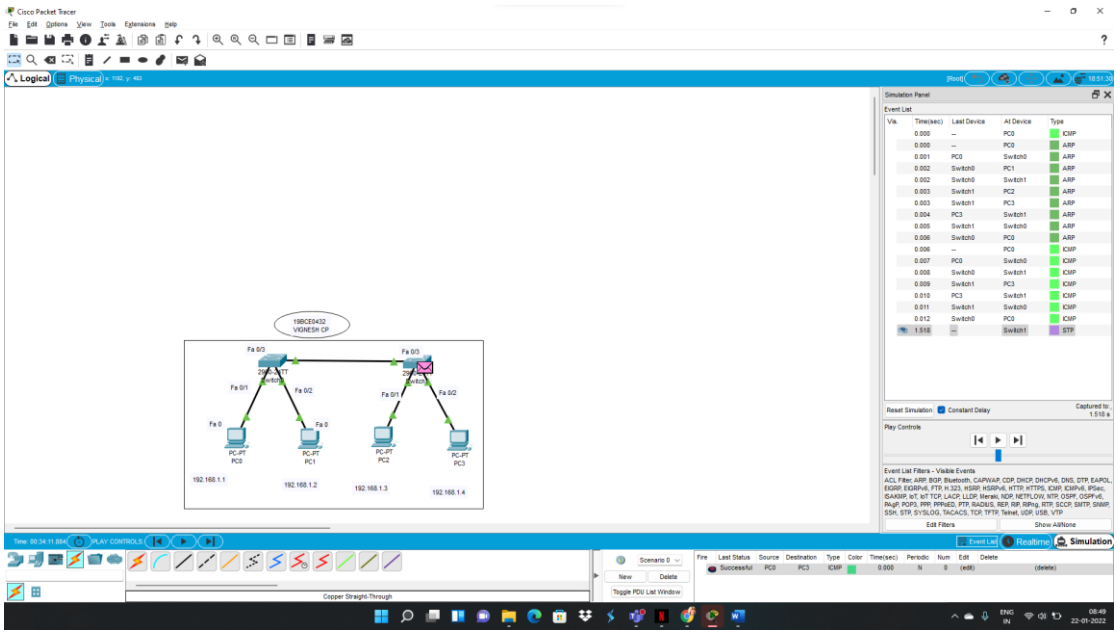
Physical Config CLI Attributes

```
24 FastEthernet/IEEE 802.3 interface(s)
2 Gigabit Ethernet/IEEE 802.3 interface(s)

63488K bytes of flash-simulated non-volatile configuration memory.
Base ethernet MAC Address       : 0001.C773.E443
Motherboard assembly number     : 73-9832-06
Power supply part number        : 341-0097-02
Motherboard serial number       : FOC103248MJ
Power supply serial number      : DCA102133JA
Model revision number           : B0
Motherboard revision number     : C0
Model number                    : WS-C2960-24TT
System serial number            : FOC1033Z1EY
Top Assembly Part Number        : 800-26671-02
Top Assembly Revision Number    : B0
Version ID                      : V02
CLEI Code Number                : COM3K00BRA
Hardware Board Revision Number  : 0x01


Switch   Ports  Model              SW Version            SW Image
------   -----  -----              ----------            ----------
*    1   26     WS-C2960-24TT      12.2                  C2960-LANBASE-M

Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version 12.2(25)FX, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 12-Oct-05 22:05 by pt_team

Press RETURN to get started!


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

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

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

%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


Switch>conf t
             ^
% Invalid input detected at '^' marker.

Switch>en
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#hostname s2
s2(config)#interface vlan2
s2(config-if)#ip address 10.0.0.2 255.0.0.0
s2(config-if)#no shut
s2(config-if)#exit
s2(config)#exit
s2#
%SYS-5-CONFIG_I: Configured from console by console
```

Ctrl+F6 to exit CLI focus

Top

WHOLE EXPERIMENT:



RESULTS:

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC3	ICMP		0.000	N	0	(edit)	(delete)

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.000	--	PC0	ARP
	0.001	PC0	Switch0	ARP
	0.002	Switch0	PC1	ARP
	0.002	Switch0	Switch1	ARP
	0.003	Switch1	PC2	ARP
	0.003	Switch1	PC3	ARP
	0.004	PC3	Switch1	ARP
	0.005	Switch1	Switch0	ARP
	0.006	Switch0	PC0	ARP
	0.006	--	PC0	ICMP
	0.007	PC0	Switch0	ICMP
	0.008	Switch0	Switch1	ICMP
	0.009	Switch1	PC3	ICMP
	0.010	PC3	Switch1	ICMP
	0.011	Switch1	Switch0	ICMP
	0.012	Switch0	PC0	ICMP
	1.518	--	Switch1	STP

CONCLUSION:

After completing the config in this lab we will get to know that VLANs allow network administrators to automatically limit access to a specified group of users by dividing workstations into different isolated LAN segments. When users move their workstations, administrators don't need to reconfigure the network or change VLAN groups.

EXPERIMENT-2

TITLE:

Connecting two different LANS using a router and switches

AIM:

To connect two different LANS using a router and switches configuration .

PROCEDURE:

Two Cisco 3200 routers are connected back-to-back using a DCE/DTE Cable. There are many ways to connect two routers back-to-back.

1: Connect through Ethernet ports: use a crossover cable to directly connect the routers together through two Ethernet ports.

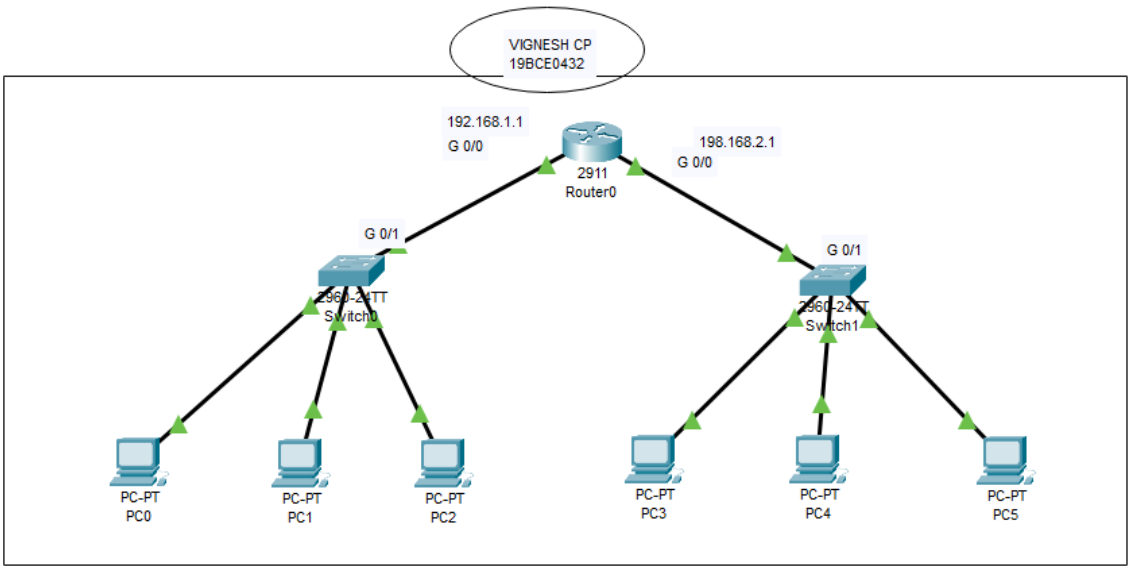
2: Connect through serial ports: use a DCE/DTE cable to connect the serial ports.

3: Connect through auxiliary user interface (AUI) ports: connect two routers through AUX (AUI speed up to 115.2 k bps).

4: Connect through Network Modules

SCREENSHOTS:

TOPOLOGY



CLI COMMAND’s

Router0

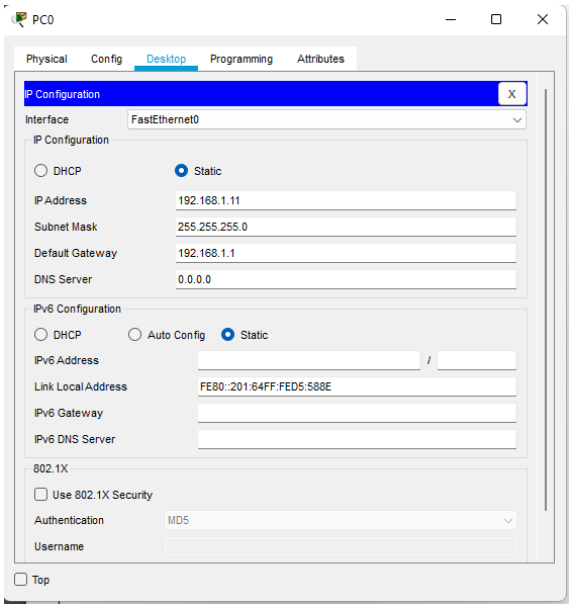
Physical Config CLI Attributes

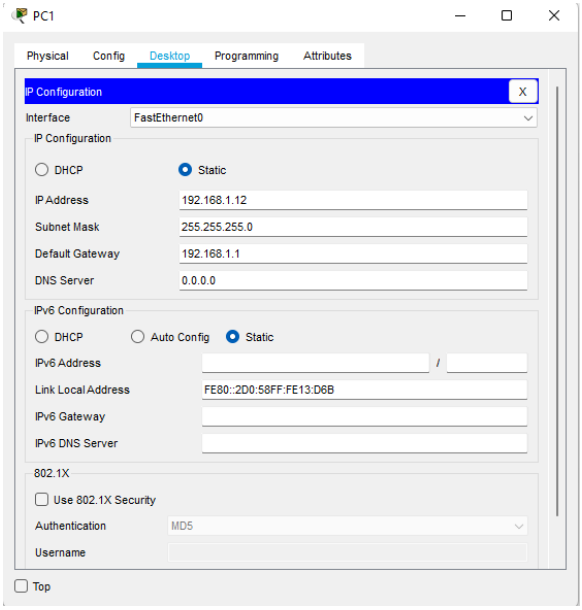
```
This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

Cisco CISCO2911/K9 (revision 1.0) with 491520K/32768K bytes of memory.
Processor board ID FTX152400KS
3 Gigabit Ethernet interfaces
DRAM configuration is 64 bits wide with parity disabled.
255K bytes of non-volatile configuration memory.
249856K bytes of ATA System CompactFlash 0 (Read/Write)


         --- System Configuration Dialog ---

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


Press RETURN to get started!



Router>en
Router#conf
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface gigabitEthernet 0/0
Router(config-if)#ip address 192.168.1.1 255.255.255.0
Router(config-if)#no shut

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

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

Router(config-if)#interface gigabitEthernet 0/1
Router(config-if)#ip address 192.168.2.1 255.255.255.0
Router(config-if)#no shut

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

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

Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

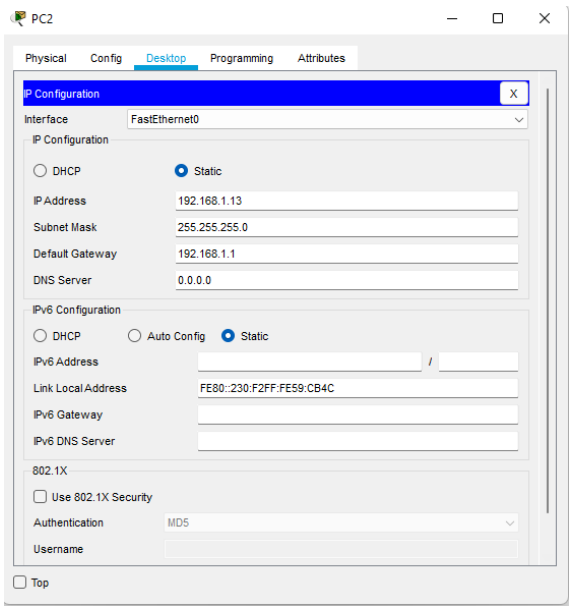
Ctrl+F6 to exit CLI focus

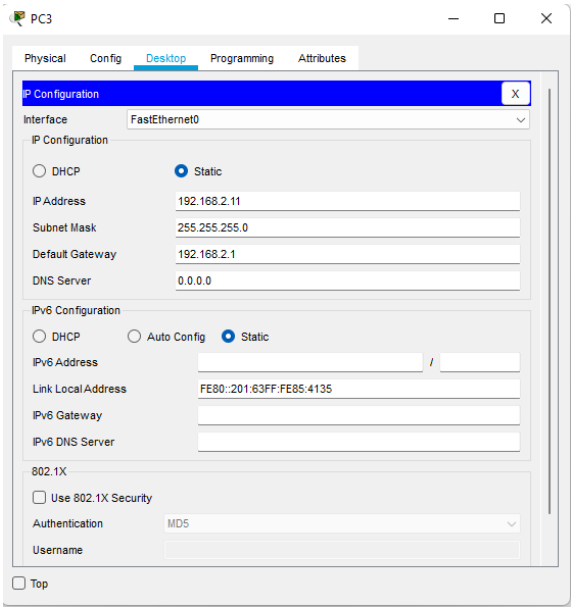
Top

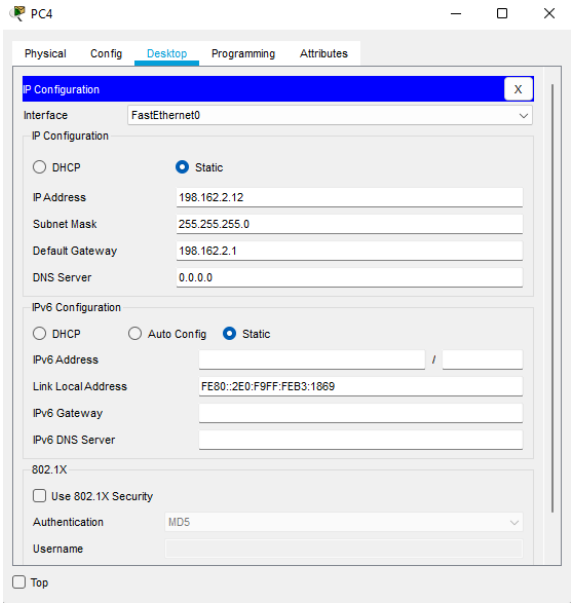
IP CONFIGURATIONS:

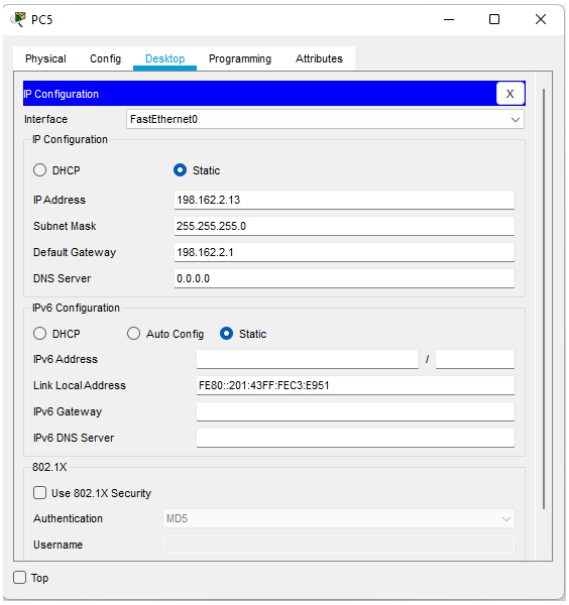












RESULTS:

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.007	Router0	Switch0	ICMP
	0.008	Switch0	PC0	ICMP
	1.079	--	Switch0	STP
	1.080	Switch0	PC0	STP
	1.080	Switch0	PC1	STP
	1.080	Switch0	PC2	STP
	1.080	Switch0	Router0	STP
	1.939	--	Switch1	STP
	1.940	Switch1	Router0	STP
	1.940	Switch1	PC4	STP
	1.940	Switch1	PC3	STP
	1.940	Switch1	PC5	STP
	3.078	--	Switch0	STP
	3.079	Switch0	PC0	STP
	3.079	Switch0	PC1	STP
	3.079	Switch0	PC2	STP
	3.079	Switch0	Router0	STP
	3.938	--	Switch1	STP
	3.939	Switch1	Router0	STP
	3.939	Switch1	PC4	STP
	3.939	Switch1	PC3	STP
	3.939	Switch1	PC5	STP
	4.327	--	Switch0	DTP

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC5	ICMP		0.000	N	0	(edit)	(delete)

CONCLUSION:

To create two LANs and connect them with Cisco routers and switches. Basic commands for Cisco devices are demonstrated in this lab. Upon completing the Lab, students should know how to create a small office wide network.