CSE3052 - INFORMATION SECURITY MANAGEMENT

DIGITAL ASSIGNMENT-1

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Experiment-1

TITLE:

Connecting to Vlans.

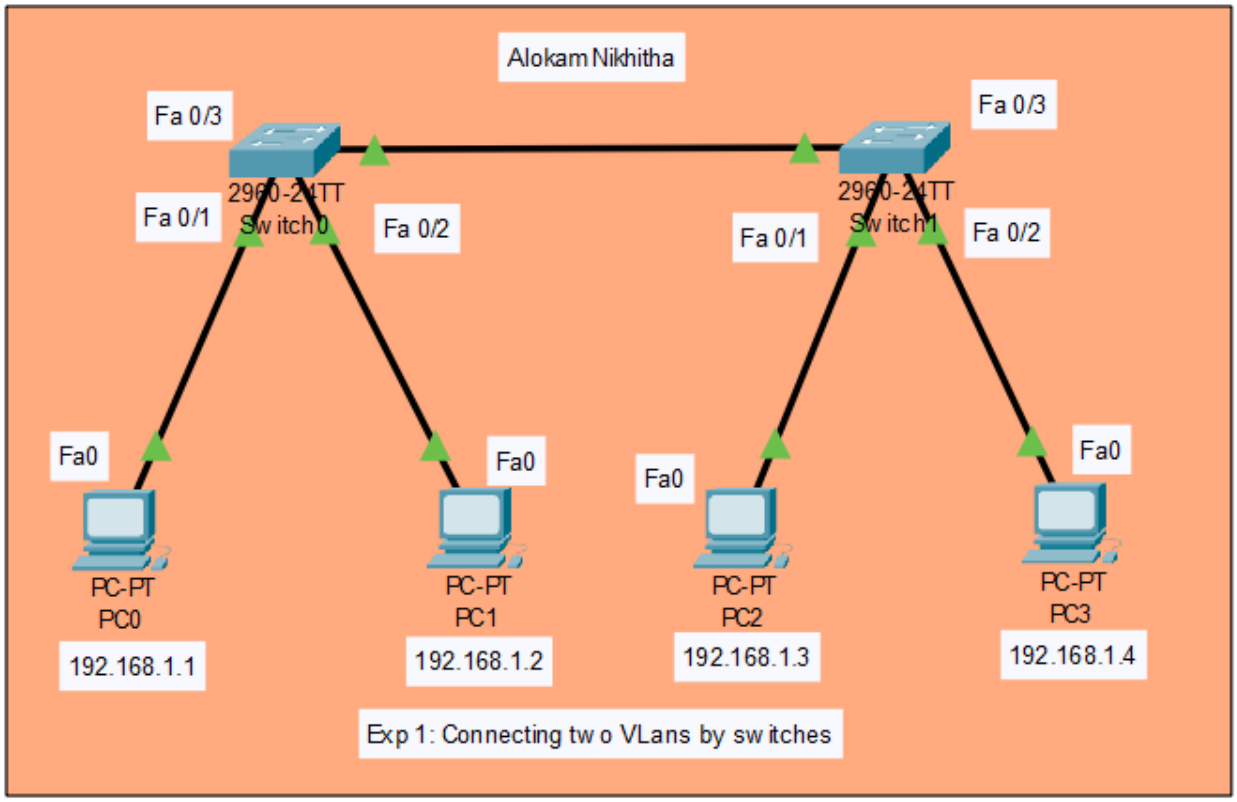
AIM:

To Connect two different VLANS using switches.

PROCEDURE:

- Select 2 Switches Switch0, Switch1.And Select 4 PCs
- Connect the First 2 PCs to the Switch0 and next 2 to the Switch1.
- Give the IP address for PCs
  PC1 : 192.168.1.1
  PC2 : 192.168.1.2
  PC3 : 192.168.1.3
  PC4 : 192.168.1.4
- Configure both the Switches.
- Set the hostname of Switch0 as s1.
- Set the hostname of Switch1 as s2.
- Give the ip address to Switch0 and Switch1 as 10.0.0.1 255.0.0.0 and 10.0.0.2 255.0.0.0 respectively.
- Pass message from the PC0 to PC3.
- Event list provides the passage of message between the components
- PDU List window shows the status of the message If it is in progress or Successful.

TOPOLOGY



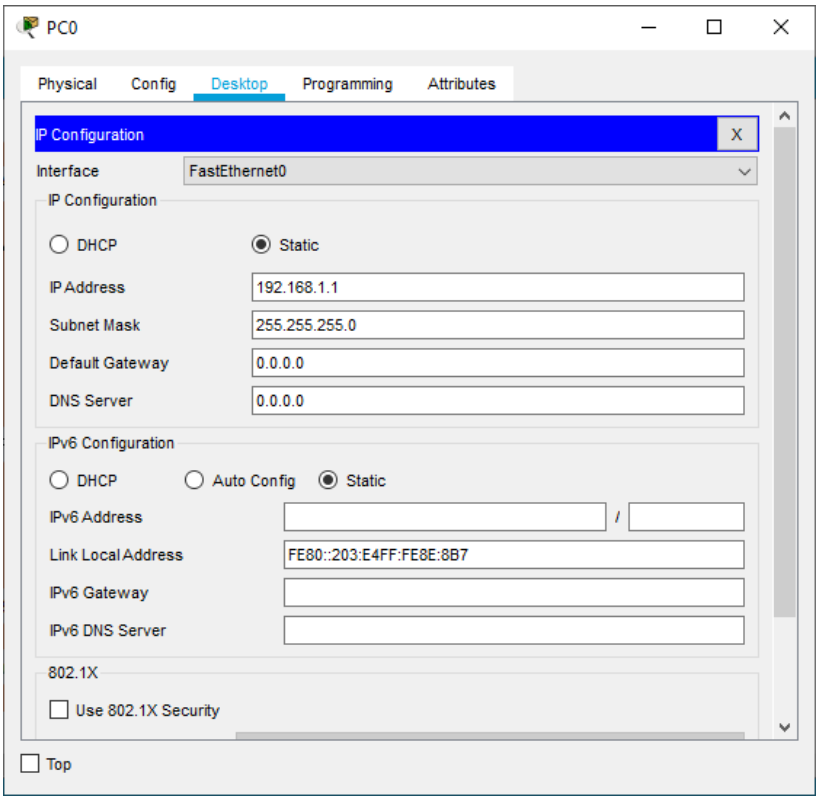
PC/ Computer Configuration:

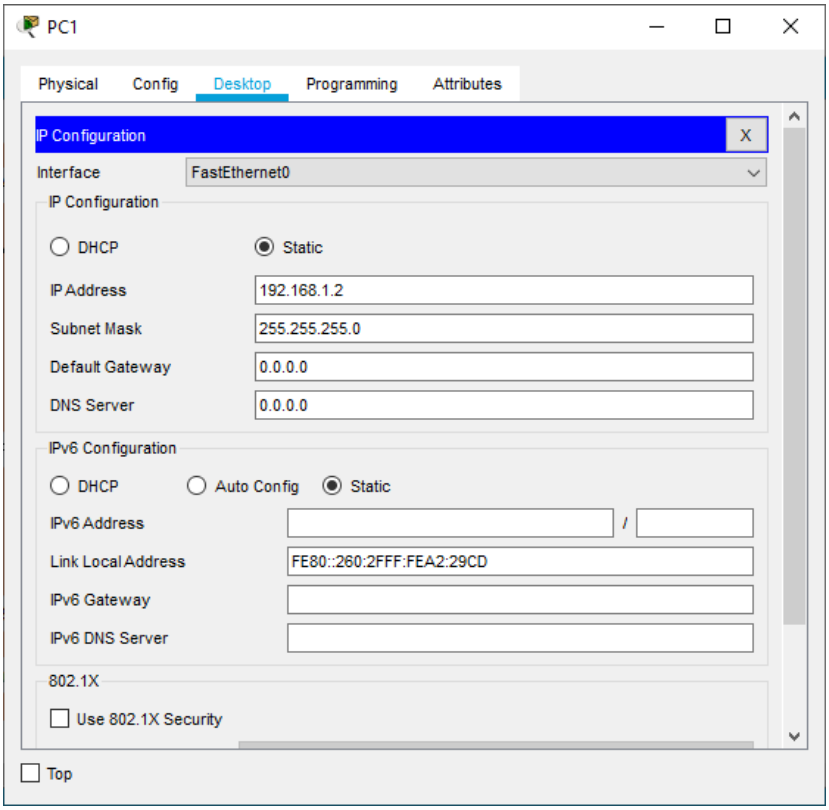
PC0 : 192.168.1.1

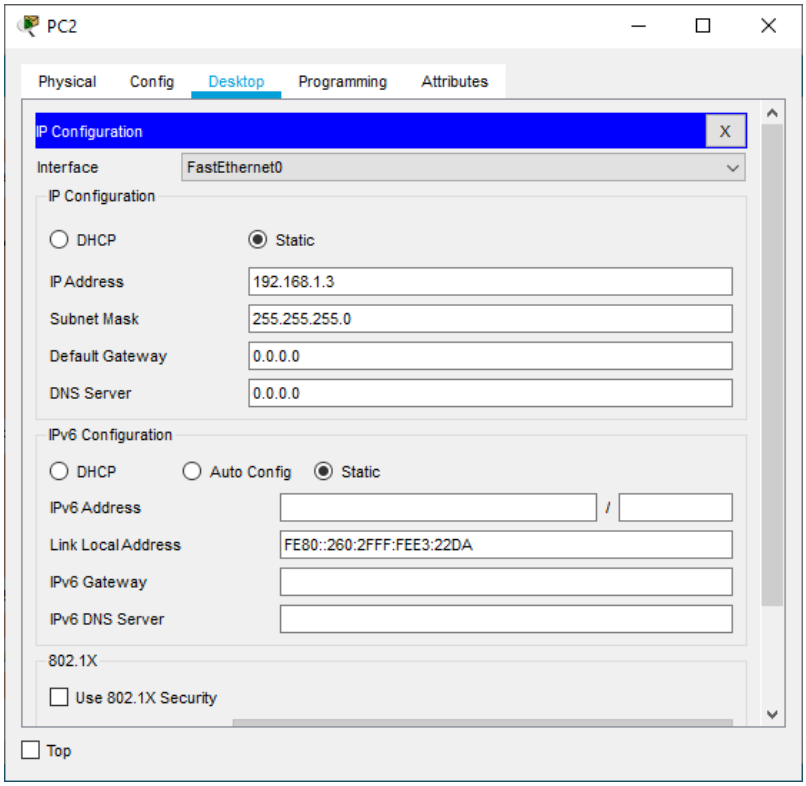
PC1 : 192.168.1.2

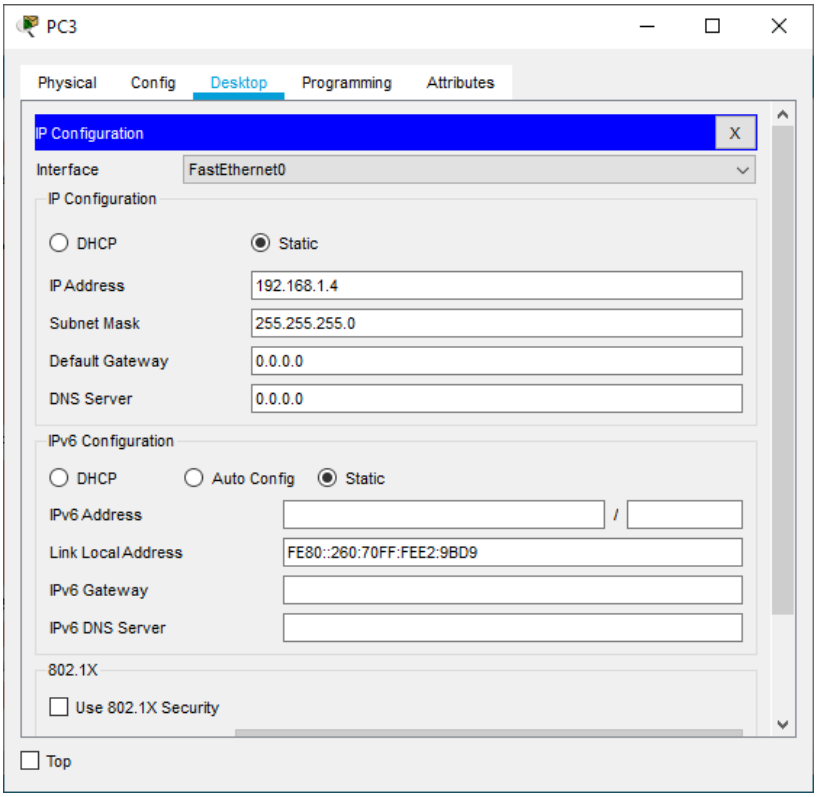
PC2 : 192.168.1.3

PC3 : 192.168.1.4


PC0
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IP Address
192.168.1.1
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address
FE80::203:E4FF:FE8E:8B7
IPv6 Gateway
IPv6 DNS Server
802.1X
Use 802.1X Security
Top

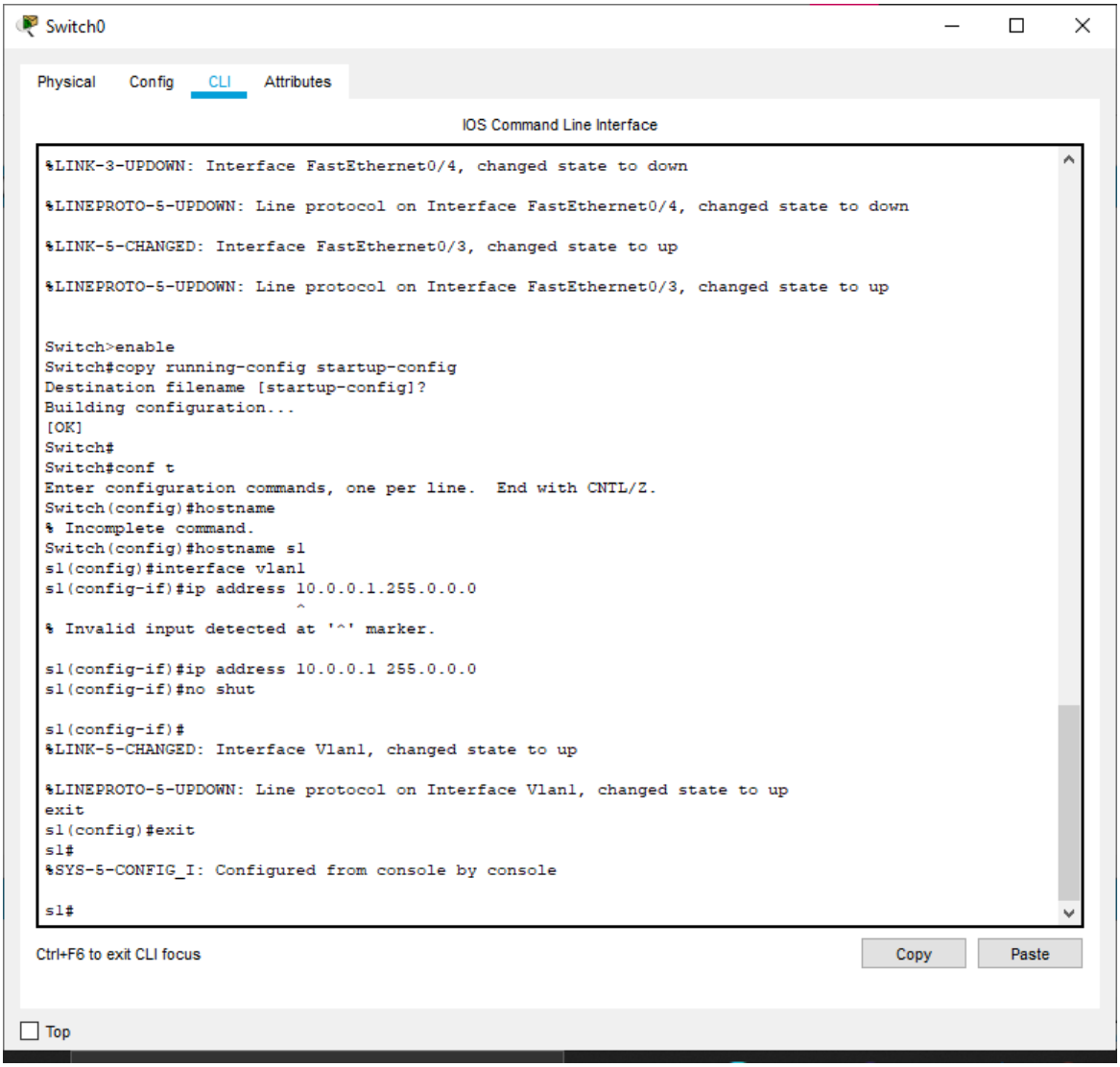

PC1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IP Address
192.168.1.2
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address
FE80::260:2FFF:FEA2:29CD
IPv6 Gateway
IPv6 DNS Server
802.1X
Use 802.1X Security
Top


PC2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IP Address
192.168.1.3
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
/
Link Local Address
FE80::260:2FFF:FEE3:22DA
IPv6 Gateway
IPv6 DNS Server
802.1X
Use 802.1X Security
Top

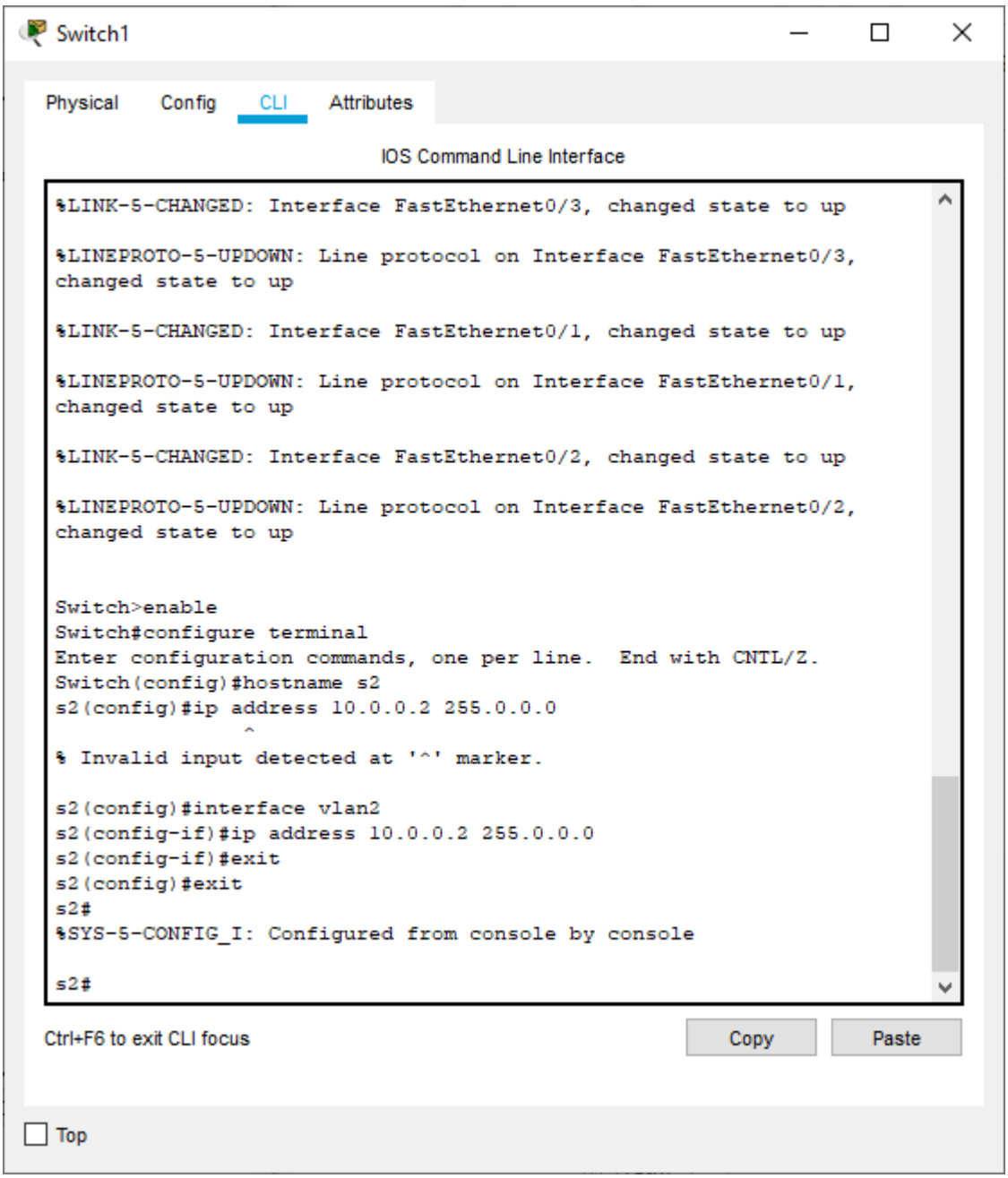

PC3
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IP Address
192.168.1.4
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
/
Link Local Address
FE80::260:70FF:FEE2:9BD9
IPv6 Gateway
IPv6 DNS Server
802.1X
Use 802.1X Security
Top

Switches Configuration:

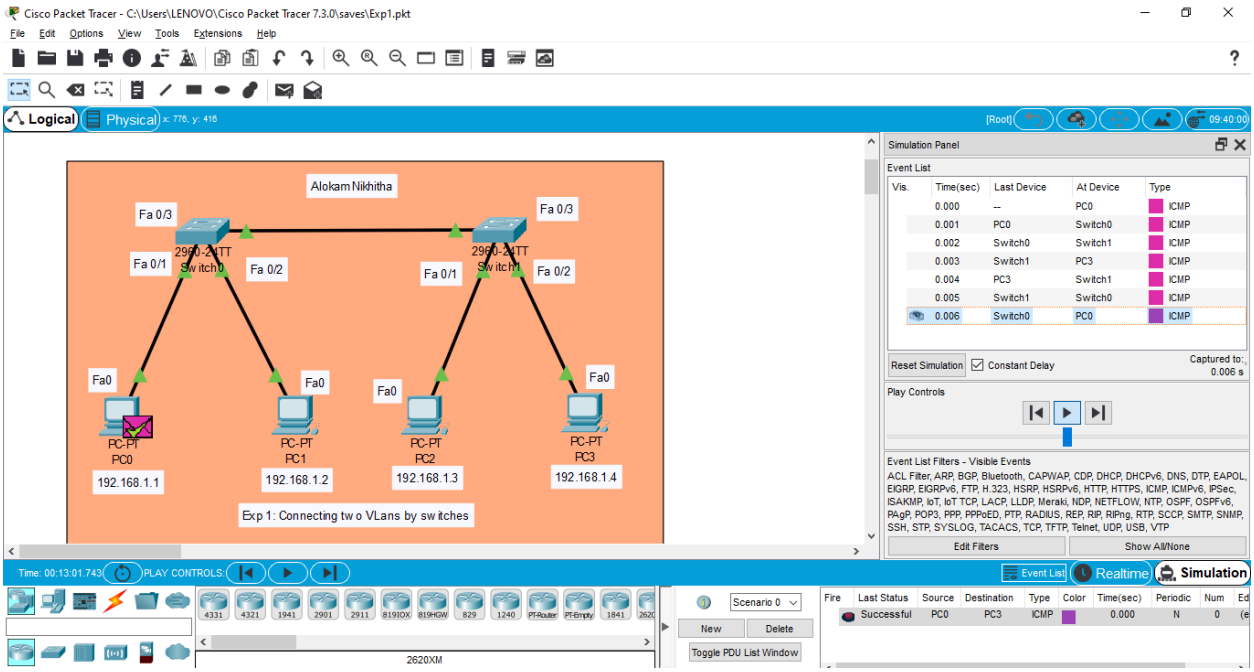
Switch 0:

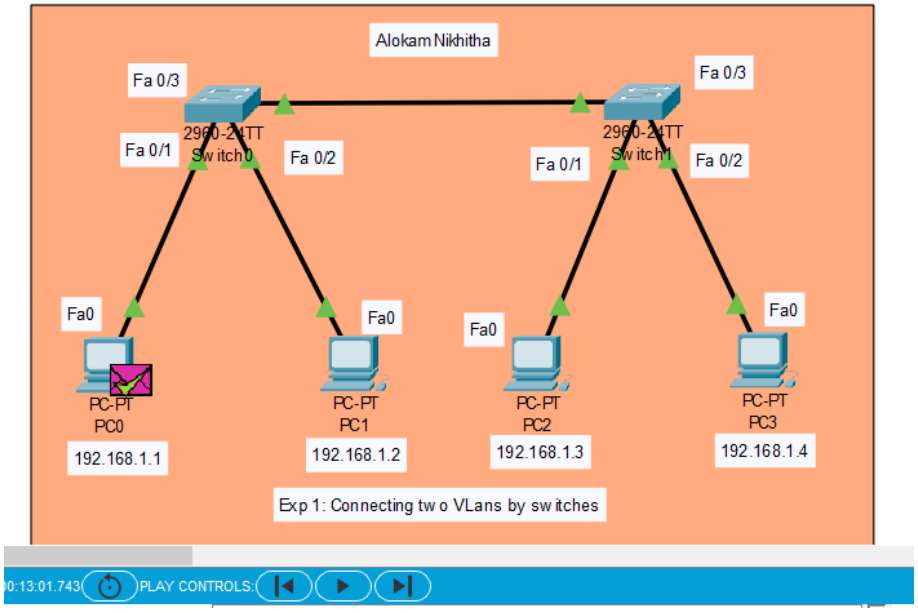


Switch 1:

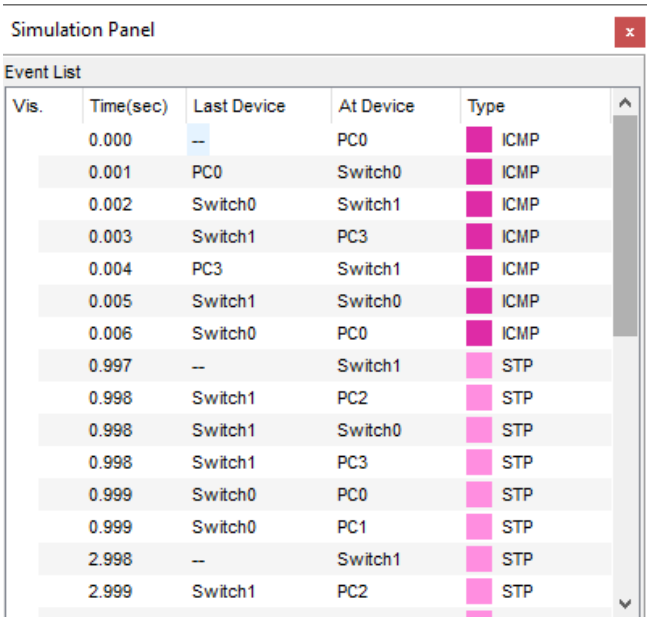

Switch1
Physical
Config
CLI
Attributes
IOS Command Line Interface
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line 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
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname s2
s2(config)#ip address 10.0.0.2 255.0.0.0
^
% Invalid input detected at '^' marker.
s2(config)#interface vlan2
s2(config-if)#ip address 10.0.0.2 255.0.0.0
s2(config-if)#exit
s2(config)#exit
s2#
%SYS-5-CONFIG_I: Configured from console by console
s2#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top

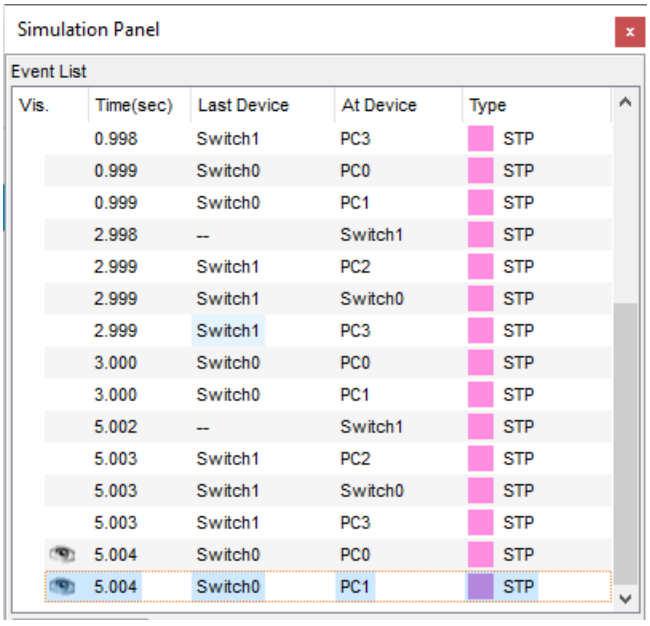
SIMULATION


Cisco Packet Tracer - C:\Users\LENOVO\Cisco Packet Tracer 7.3.0\saves\Exp1.pkt
File Edit Options View Tools Extensions Help
Logical Physical
Alokam Nikhitha
Fa 0/3
Fa 0/1
Fa 0/2
2960-24TT
Switch0
Switch1
Fa0
PC-PT
PC0
PC1
PC2
PC3
192.168.1.1
192.168.1.2
192.168.1.3
192.168.1.4
Exp 1: Connecting tw o VLans by sw itches
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- PC0 ICMP
0.001 PC0 Switch0 ICMP
0.002 Switch0 Switch1 ICMP
0.003 Switch1 PC3 ICMP
0.004 PC3 Switch1 ICMP
0.005 Switch1 Switch0 ICMP
0.006 Switch0 PC0 ICMP
Reset Simulation
Constant Delay
Captured to: 0.006 s
Play Controls
Event List Filters - Visible Events
Edit Filters
Show All/None
Time: 00:13:01.743
PLAY CONTROLS:
Event List
Realtime
Simulation
2620XM
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num
Successful PC0 PC3 ICMP 0.000 N 0

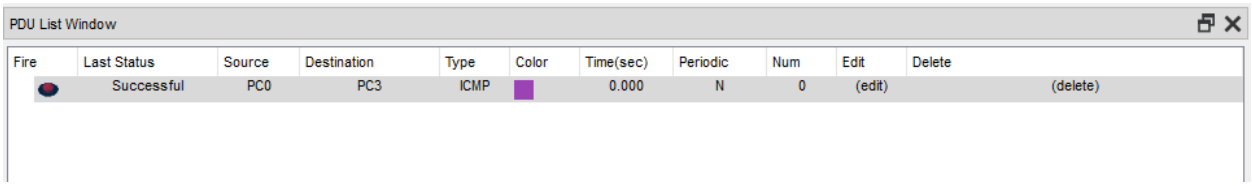

Alokam Nikhitha
Fa 0/3
Fa 0/1
Fa 0/2
2960-24TT
Switch0
Switch1
Fa0
PC-PT
PC0
PC1
PC2
PC3
192.168.1.1
192.168.1.2
192.168.1.3
192.168.1.4
Exp 1: Connecting tw o VLans by sw itches
0:13:01.743
PLAY CONTROLS:

Event List


Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- PC0 ICMP
0.001 PC0 Switch0 ICMP
0.002 Switch0 Switch1 ICMP
0.003 Switch1 PC3 ICMP
0.004 PC3 Switch1 ICMP
0.005 Switch1 Switch0 ICMP
0.006 Switch0 PC0 ICMP
0.997 -- Switch1 STP
0.998 Switch1 PC2 STP
0.998 Switch1 Switch0 STP
0.998 Switch1 PC3 STP
0.999 Switch0 PC0 STP
0.999 Switch0 PC1 STP
2.998 -- Switch1 STP
2.999 Switch1 PC2 STP


Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.998 Switch1 PC3 STP
0.999 Switch0 PC0 STP
0.999 Switch0 PC1 STP
2.998 -- Switch1 STP
2.999 Switch1 PC2 STP
2.999 Switch1 Switch0 STP
2.999 Switch1 PC3 STP
3.000 Switch0 PC0 STP
3.000 Switch0 PC1 STP
5.002 -- Switch1 STP
5.003 Switch1 PC2 STP
5.003 Switch1 Switch0 STP
5.003 Switch1 PC3 STP
5.004 Switch0 PC0 STP
5.004 Switch0 PC1 STP

Result



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

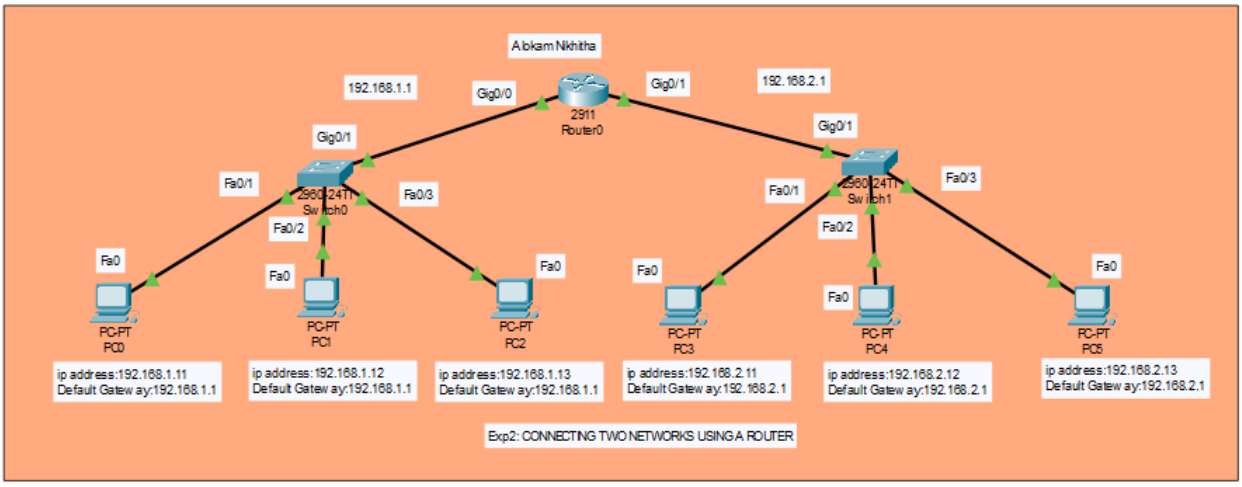
AIM:

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

PROCEDURE:

- **Select a 2911 Router**
- **Select 2960 2 switches and connect them to the router using Straight-through**
- **Select straight through cable from router select gigabitethernet 0/0 to switch0 gigabitethernet 0/1 and from router select gigabitethernet 0/1 to switch1 gigabitethernet 0/1**
- **Select 3 PCs and connect them to the switches in each network.**
- **Give addresses for Pcs in Network1 as : 192.168.1.11 to 192.168.1.13**
- **Give addresses for Pcs in Network2 as : 192.168.2.11 to 192.168.2.13**
- **Set default gateway for the Network 1 as 192.168.1.1 (as Similar to router gigabitEthernet 0/0)**
- **Set default gateway for the Network 2 as 192.168.2.1 (as Similar to router gigabitEthernet 0/1).**
- **Pass message from PC0 in Network1 to PC5 in Network 2**
- **Event list provides the passage of message between the components**
- **PDU List window shows the status of the message If it is in progress or Successful.**

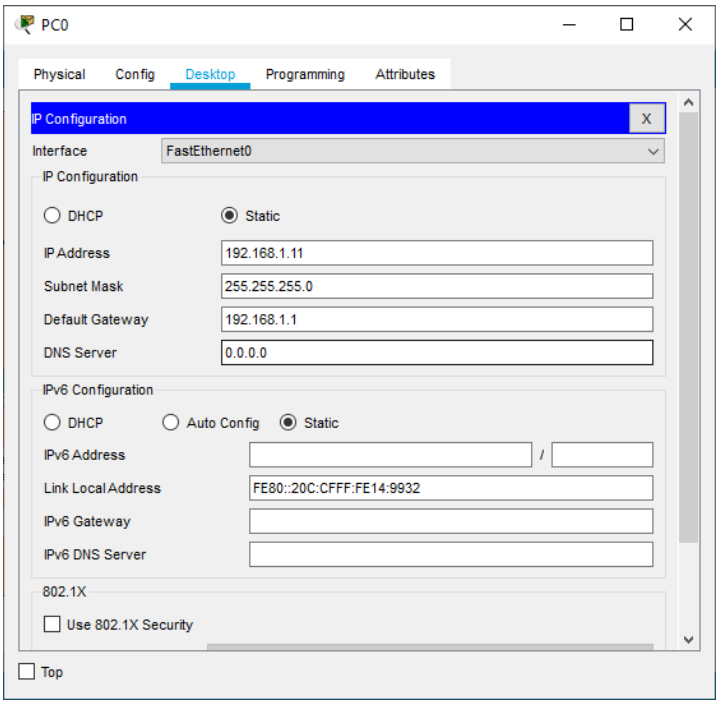
TOPOLOGY



PC/ Computer Configuration:

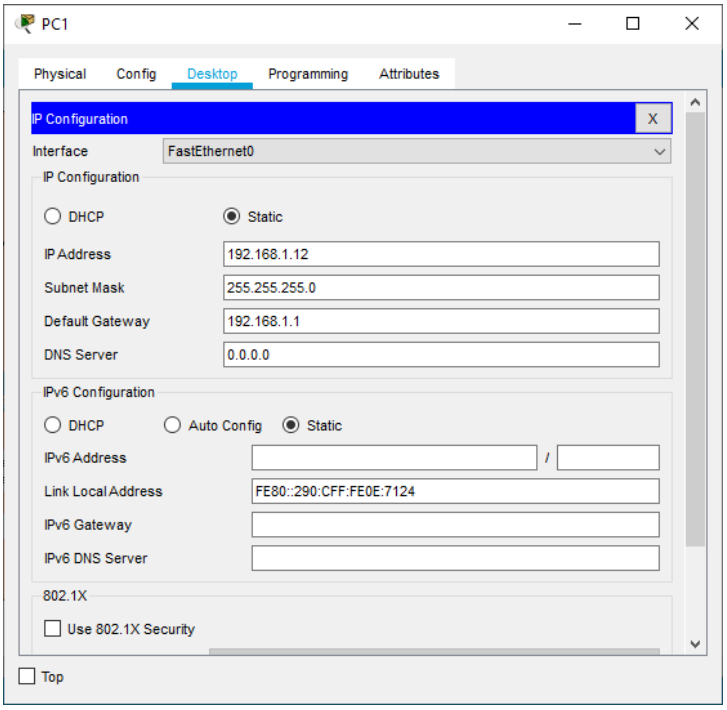
PC0

Ip Address: 192.168.1.11
Default Gateway:192.168.1.1



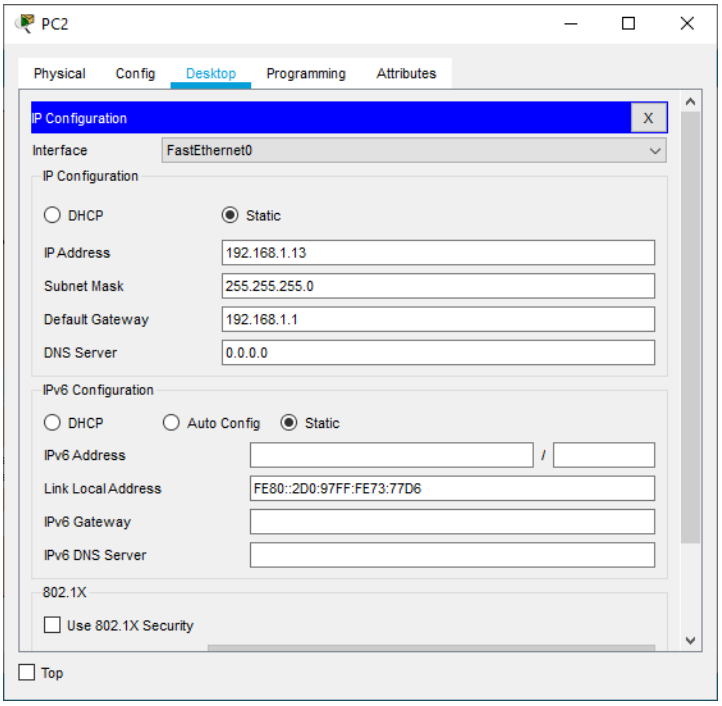
PC1

Ip Address: 192.168.1.12
Default Gateway:192.168.1.1



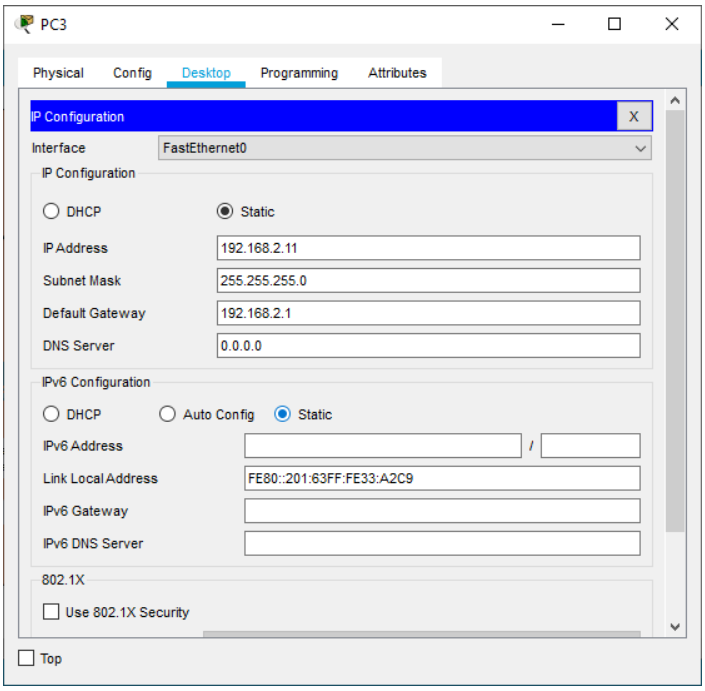
PC2

Ip Address: 192.168.1.13
Default Gateway:192.168.1.1



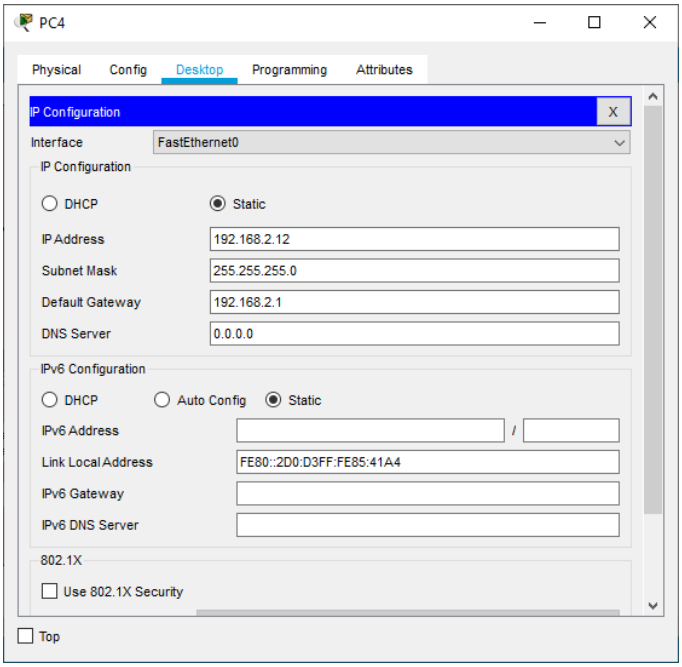
PC3

Ip Address: 192.168.2.11
Default Gateway:192.168.2.1



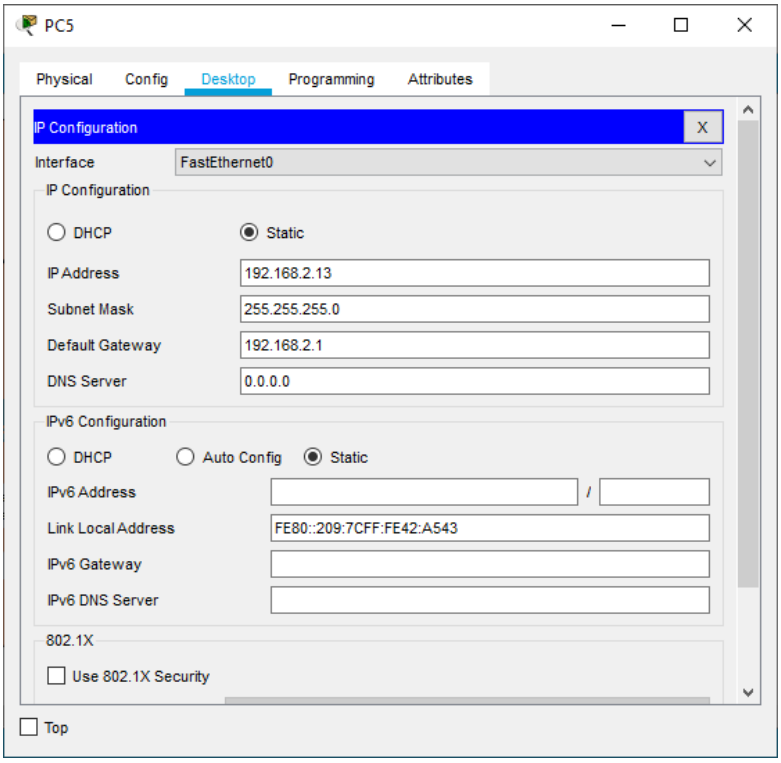
PC4

Ip Address: 192.168.2.12
Default Gateway:192.168.2.1



PC5

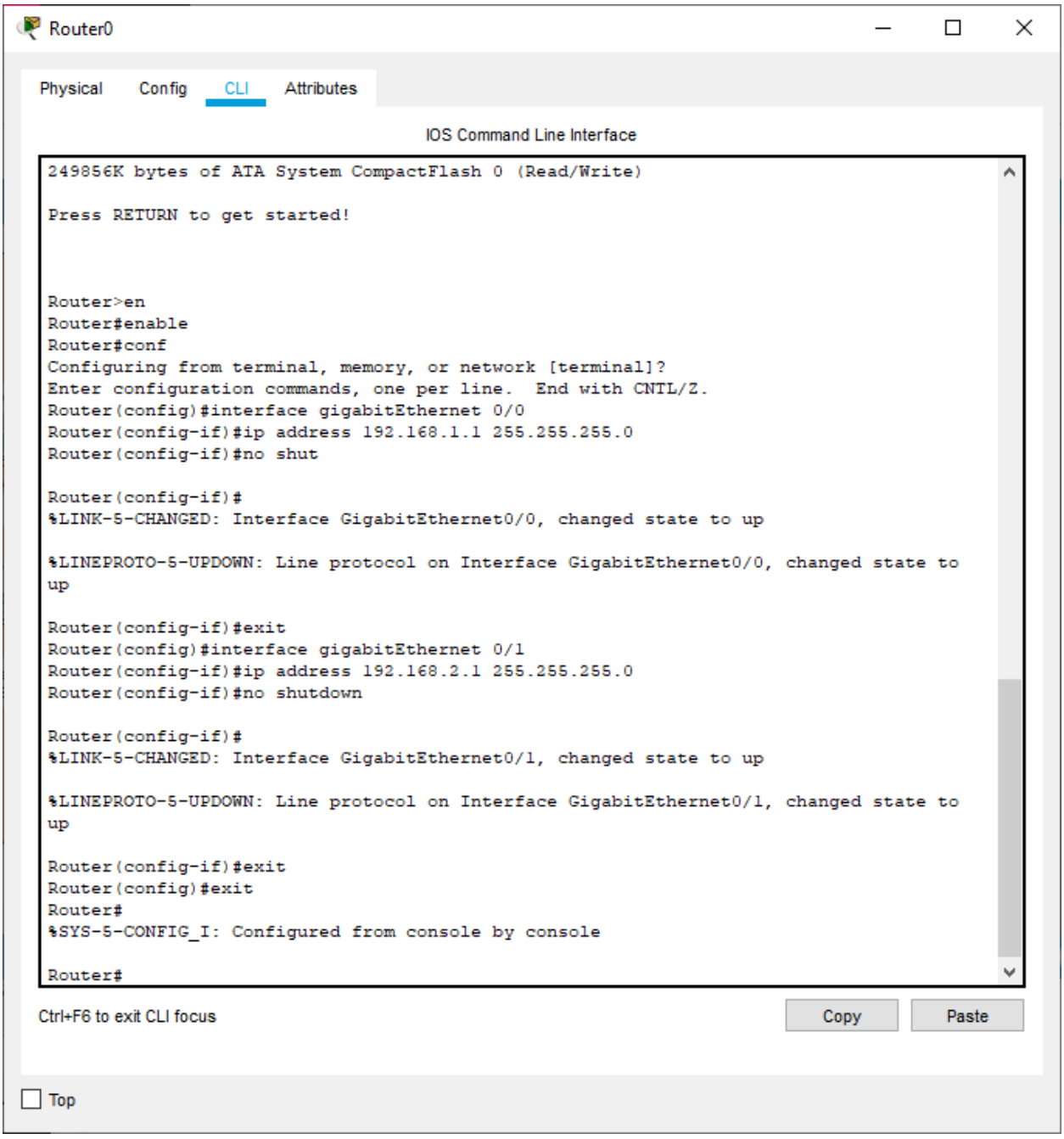
Ip Address: 192.168.2.13
Default Gateway:192.168.2.1



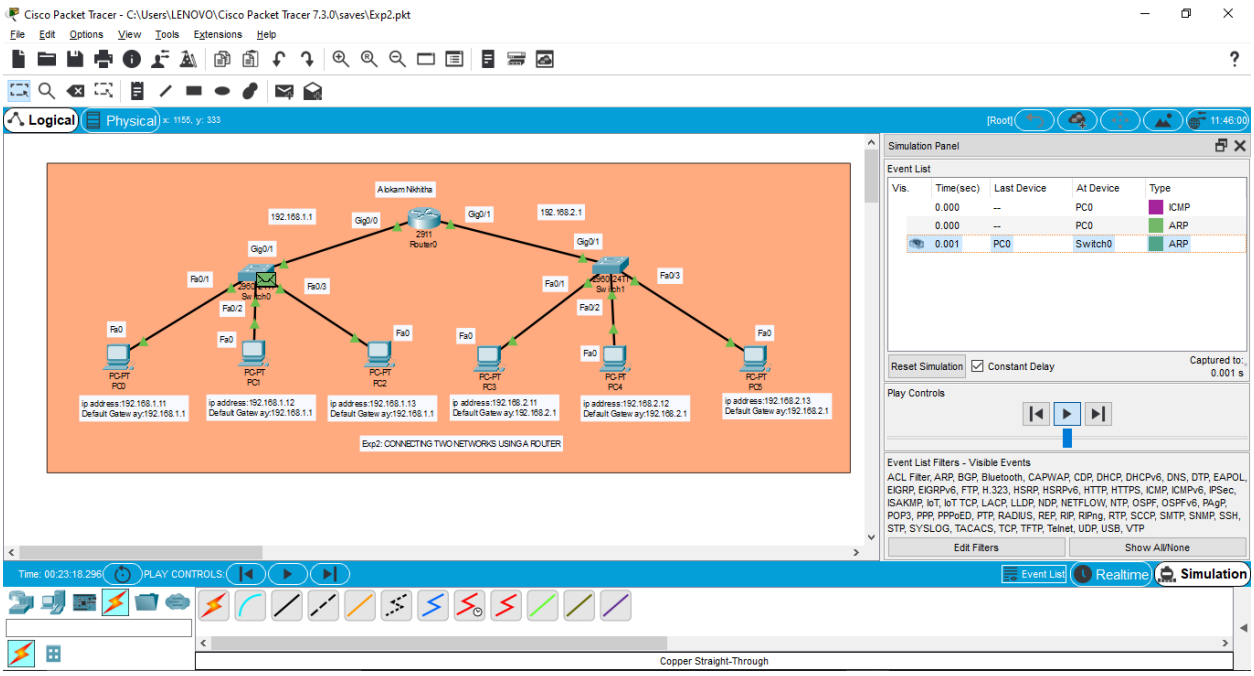
Router Configuration:

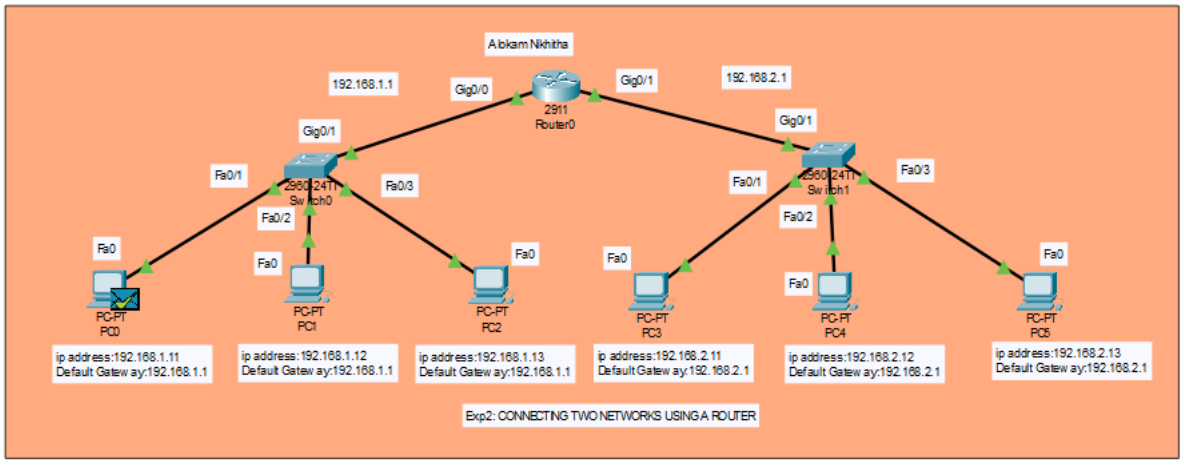
Router 0:

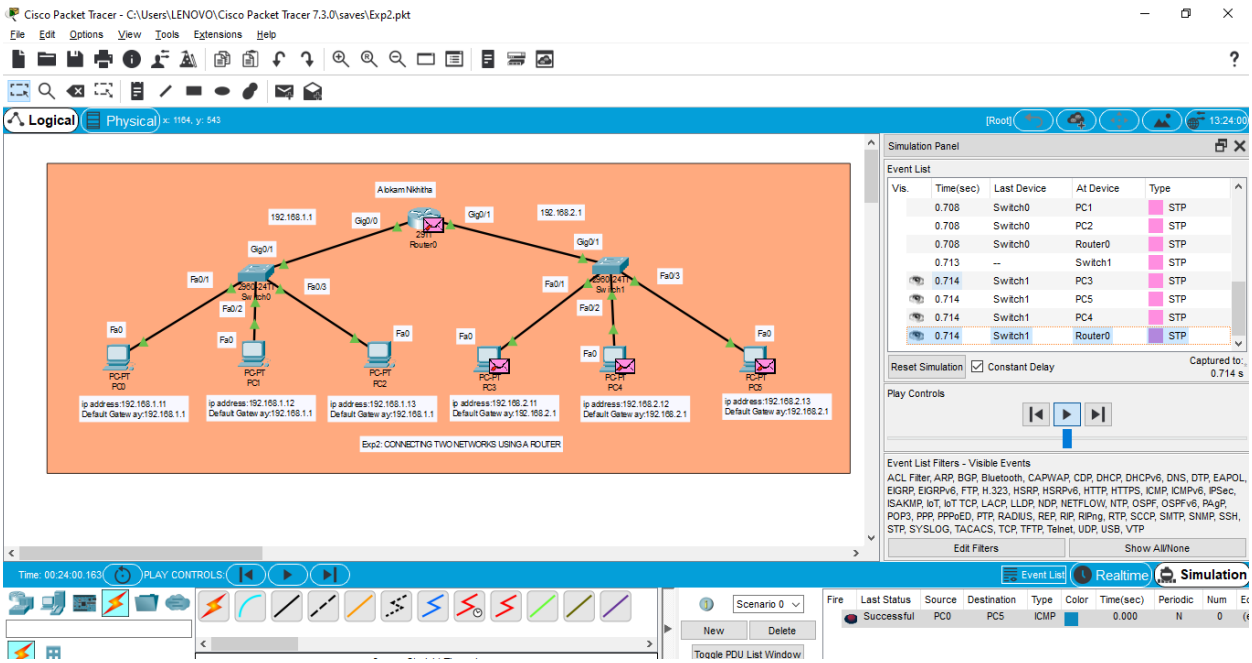
CLI commands:



SIMULATION


Cisco Packet Tracer - C:\Users\LENOVO\Cisco Packet Tracer 7.3.0\saves\Exp2.pkt
File Edit Options View Tools Extensions Help
Logical
Physical
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
Reset Simulation
Constant Delay
Captured to: 0.001 s
Play Controls
Event List Filters - Visible Events
Edit Filters
Show All/None
Realtime
Simulation
Copper Straight-Through
Abkam Nikhitha
2911 Router0
192.168.1.1
192.168.2.1
Gig0/0
Gig0/1
Fa0/1
Fa0/2
Fa0/3
Fa0
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
PC-PT PC4
PC-PT PC5
ip address:192.168.1.11 Default Gatew ay:192.168.1.1
ip address:192.168.1.12 Default Gatew ay:192.168.1.1
ip address:192.168.1.13 Default Gatew ay:192.168.1.1
ip address:192.168.2.11 Default Gatew ay:192.168.2.1
ip address:192.168.2.12 Default Gatew ay:192.168.2.1
ip address:192.168.2.13 Default Gatew ay:192.168.2.1
Exp2: CONNECTING TWO NETWORKS USING A ROUTER


Abkam Nikhitha
2911 Router0
192.168.1.1
192.168.2.1
Gig0/0
Gig0/1
Fa0/1
Fa0/2
Fa0/3
Fa0
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
PC-PT PC4
PC-PT PC5
ip address:192.168.1.11 Default Gatew ay:192.168.1.1
ip address:192.168.1.12 Default Gatew ay:192.168.1.1
ip address:192.168.1.13 Default Gatew ay:192.168.1.1
ip address:192.168.2.11 Default Gatew ay:192.168.2.1
ip address:192.168.2.12 Default Gatew ay:192.168.2.1
ip address:192.168.2.13 Default Gatew ay:192.168.2.1
Exp2: CONNECTING TWO NETWORKS USING A ROUTER



Event List

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.001	PC0	Switch0	ICMP
	0.002	Switch0	Router0	ICMP
	0.003	Router0	Switch1	ICMP
	0.004	Switch1	PC5	ICMP
	0.005	PC5	Switch1	ICMP
	0.006	Switch1	Router0	ICMP
	0.007	Router0	Switch0	ICMP
	0.008	Switch0	PC0	ICMP
	0.447	--	Switch0	DTP
	0.448	Switch0	Router0	DTP
	0.707	--	Switch0	STP
	0.708	Switch0	PC0	STP
	0.708	Switch0	PC1	STP
	0.708	Switch0	PC2	STP

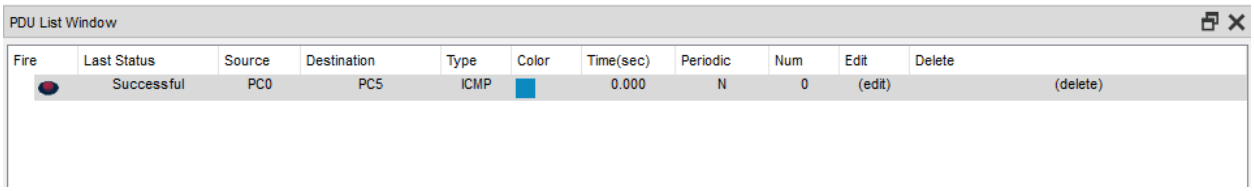
Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.714	Switch1	PC4	STP
	0.714	Switch1	Router0	STP
	2.707	--	Switch0	STP
	2.708	Switch0	PC0	STP
	2.708	Switch0	PC1	STP
	2.708	Switch0	PC2	STP
	2.708	Switch0	Router0	STP
	2.718	--	Switch1	STP
	2.719	Switch1	PC3	STP
	2.719	Switch1	PC5	STP
	2.719	Switch1	PC4	STP
	2.719	Switch1	Router0	STP
	3.572	--	Switch1	DTP
	3.573	Switch1	PC5	DTP
	4.710	--	Switch0	STP

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	4.724	Switch1	PC5	STP
	4.724	Switch1	PC4	STP
	4.724	Switch1	Router0	STP
	6.713	--	Switch0	STP
	6.714	Switch0	PC0	STP
	6.714	Switch0	PC1	STP
	6.714	Switch0	PC2	STP
	6.714	Switch0	Router0	STP
	6.727	--	Switch1	STP
	6.728	Switch1	PC3	STP
	6.728	Switch1	PC5	STP
	6.728	Switch1	PC4	STP
	6.728	Switch1	Router0	STP
	7.903	--	Switch1	DTP
	7.904	Switch1	Router0	DTP

Results



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.