

Experiment 2: construct a VLAN and make the PC's communicate among a VLAN.
Create a word document showing all the steps followed along with the screenshots.

Experiment 2

Aim:

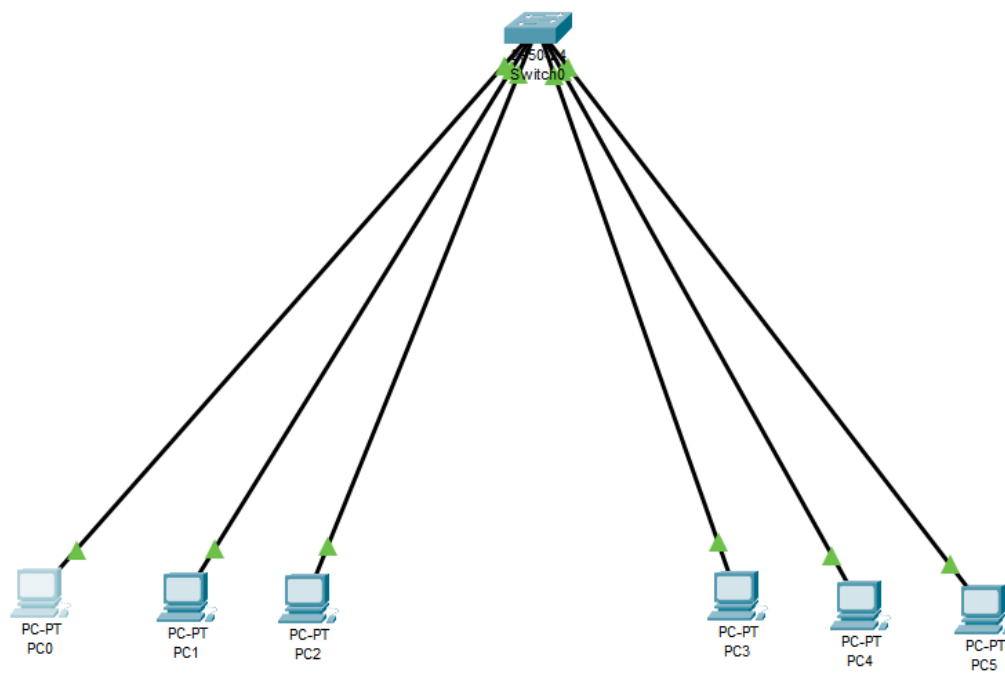
To construct a VLAN and make the PC's communicate among a VLAN

Requirements

- Windows pc – 6 Nos
- CISCO Packet Tracer Software
- 8 port switch – 1 No
- Cat-5 LAN cable

Procedure

- Open the CISCO Packet tracer software
- Drag and drop 6 pcs using End Device Icons on the left corner
- Select 8 port switch from switch icon list in the left bottom corner
- Make the connections using Straight through Ethernet cables
- Give IP address of the PCs as per table, ping between PCs and observe the transfer of data packets in real and simulation mode.



Give IP address and Gate way using following table to PCs:-

Input Details for VLAN 10

PC0	PC1	PC2
IP Address : 10.0.0.1	IP Address : 10.0.0.2	IP Address : 10.0.0.3
Subnet Mask : 255.255.255.0	Subnet Mask : 255.255.255.0	Subnet Mask : 255.255.255.0
Gate way : 10.0.0.50	Gate way : 10.0.0.50	Gate way : 10.0.0.50

Input Details for VLAN 20

PC0	PC1	PC2
IP Address : 20.0.0.1	IP Address : 20.0.0.2	IP Address : 20.0.0.3
Subnet Mask : 255.255.255.0	Subnet Mask : 255.255.255.0	Subnet Mask : 255.255.255.0
Gate way : 20.0.0.50	Gate way : 20.0.0.50	Gate way : 20.0.0.50

PC0

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

Interface

FastEthernet0

IP Configuration

DHCP

Static

IPv4 Address

10.0.0.1

Subnet Mask

255.255.255.0

Default Gateway

10.0.0.50

DNS Server

0.0.0.0

IPv6 Configuration

Automatic

Static

IPv6 Address

/

Link Local Address

FE80::206:2AFF:FE63:7D11

Default Gateway

DNS Server

802.1X

Use 802.1X Security

Authentication

MD5

Username

Password

Top

PC1

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

Interface

FastEthernet0

IP Configuration

DHCP

Static

IPv4 Address

10.0.0.2

Subnet Mask

255.255.255.0

Default Gateway

10.0.0.50

DNS Server

0.0.0.0

IPv6 Configuration

Automatic

Static

IPv6 Address

/

Link Local Address

FE80::260:5CFF:FEE6:EEE3

Default Gateway

DNS Server

802.1X

Use 802.1X Security

Authentication

MD5

Username

Password

Top

PC2

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

Interface

FastEthernet0

IP Configuration

☐ DHCP

☒ Static

IPv4 Address

10.0.0.3

Subnet Mask

255.255.255.0

Default Gateway

10.0.0.50

DNS Server

0.0.0.0

IPv6 Configuration

☐ Automatic

☒ Static

IPv6 Address

/

Link Local Address

FE80::201:96FF:FED2:9CD5

Default Gateway

DNS Server

802.1X

☐ Use 802.1X Security

Authentication

MD5

Username

Password

☐ Top

PC3

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

Interface

FastEthernet0

IP Configuration

DHCP

Static

IPv4 Address

20.0.0.1

Subnet Mask

255.255.255.0

Default Gateway

20.0.0.50

DNS Server

0.0.0.0

IPv6 Configuration

Automatic

Static

IPv6 Address

/

Link Local Address

FE80::250:FFF:FEBA:C102

Default Gateway

DNS Server

802.1X

Use 802.1X Security

Authentication

MD5

Username

Password

Top

PC4

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

Interface

FastEthernet0

IP Configuration

DHCP

Static

IPv4 Address

20.0.0.2

Subnet Mask

255.255.255.0

Default Gateway

20.0.0.50

DNS Server

0.0.0.0

IPv6 Configuration

Automatic

Static

IPv6 Address

/

Link Local Address

FE80::201:C9FF:FE0C:C099

Default Gateway

DNS Server

802.1X

Use 802.1X Security

Authentication

MD5

Username

Password

Top

PC5

Physical

Config

Desktop

Programming

Attributes

IP Configuration

X

Interface

FastEthernet0

IP Configuration

DHCP

Static

IPv4 Address

20.0.0.3

Subnet Mask

255.255.255.0

Default Gateway

20.0.0.50

DNS Server

0.0.0.0

IPv6 Configuration

Automatic

Static

IPv6 Address

/

Link Local Address

FE80::20C:85FF:FECE:5451

Default Gateway

DNS Server

802.1X

Use 802.1X Security

Authentication

MD5

Username

Password

Top

Now go to Switch->CLI and run following commands

CONFIGURATION OF THE SWITCHPORT FOR VLAN:

```
Switch>en
```

```
Switch#config
```

```
Configuring from terminal, memory, or network [terminal]?
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Switch(config)#vlan 10
```

```
Switch(config-vlan)#ex
```

```
Switch(config)#vlan 20
```

```
Switch(config-vlan)#ex
```

```
Switch(config)#interface range fastEthernet 0/1-3
```

```
Switch(config-if-range)#switchport access vlan 10
```

```
Switch(config-if-range)#ex
```

```
Switch(config)#interface range fastEthernet 0/4-6
```

```
Switch(config-if-range)#switchport access vlan 20
```

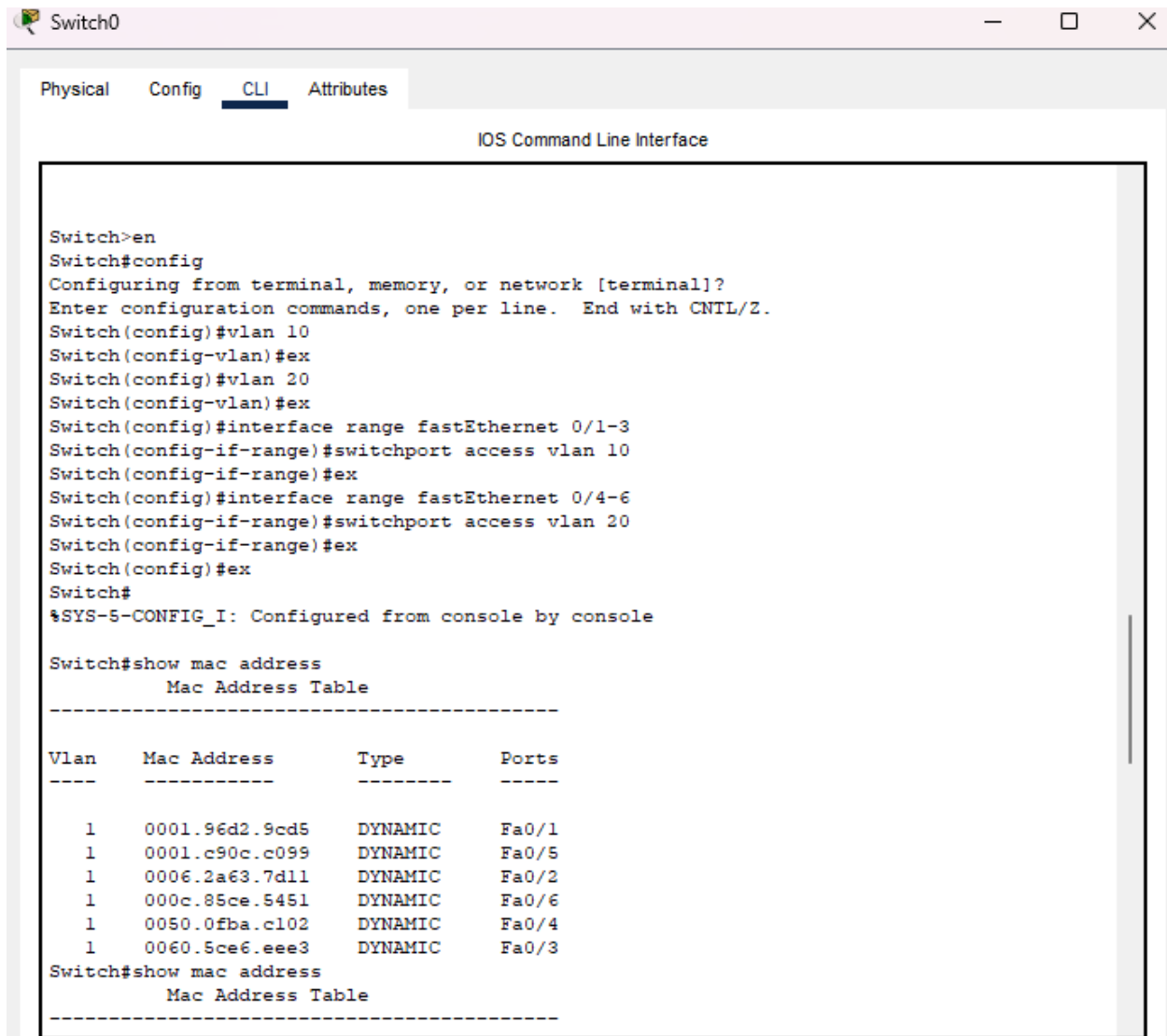
```
Switch(config-if-range)#ex
```

```
Switch(config)#ex
```

```
Switch#
```

```
%SYS-5-CONFIG_I: Configured from console by console
```

After running above commands
Run 'show mac address'



The screenshot shows a network switch interface with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the IOS Command Line Interface. The user has entered the following commands:

```
Switch>en
Switch#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#ex
Switch(config)#vlan 20
Switch(config-vlan)#ex
Switch(config)#interface range fastEthernet 0/1-3
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#ex
Switch(config)#interface range fastEthernet 0/4-6
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#ex
Switch(config)#ex
Switch#
```

The output of the `show mac address` command is displayed, showing the Mac Address Table. The table has four columns: Vlan, Mac Address, Type, and Ports. The output is as follows:

```
Switch#show mac address
Mac Address Table
-----
Vlan    Mac Address      Type        Ports
----    -
1       0001.96d2.9cd5   DYNAMIC     Fa0/1
1       0001.c90c.c099   DYNAMIC     Fa0/5
1       0006.2a63.7d11   DYNAMIC     Fa0/2
1       000c.85ce.5451   DYNAMIC     Fa0/6
1       0050.0fba.c102   DYNAMIC     Fa0/4
1       0060.5ce6.eee3   DYNAMIC     Fa0/3
```

The output of the `show mac address` command is displayed again, showing the Mac Address Table. The table has four columns: Vlan, Mac Address, Type, and Ports. The output is as follows:

```
Switch#show mac address
Mac Address Table
-----
```

```
Switch#
Switch#show mac-address
      Mac Address Table
-----
Vlan    Mac Address      Type      Ports
----    -
1       0001.96d2.9cd5    DYNAMIC   Fa0/1
1       0001.c90c.c099    DYNAMIC   Fa0/5
1       0006.2a63.7d11    DYNAMIC   Fa0/2
1       000c.85ce.5451    DYNAMIC   Fa0/6
1       0050.0fba.c102    DYNAMIC   Fa0/4
1       0060.5ce6.eee3    DYNAMIC   Fa0/3
Switch#
```