

## Experiment 11:

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

VLAN

Aim: To construct a VLAN and make PC communicate among LAN.

Topology:

by 1 looping

Procedure:

- Create a topology as shown above choose 1841 router and 2960-24TT switch,
- Set the ip address of the router and 4 PC's respectively we use class C type address also set gateways.
- In switch, go to config tab and select VLAN database, Give any VLAN no. like 2 and name as VLAN.
- Select the interface fastethernet 4/1 and make it trunk.
- Next select the switches under 2nd interface which has interface 0/3 & 0/4 click on each of them and set VLAN number 2.

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Page \_\_\_\_\_
- Go router → config tab and select VLAN database and enter the name VLAN & no 2 created.
  - Go to router → CLI and type the following commands:
    - > config t
    - > interface fa0/0
    - > ip address 192.168.1.1 255.255.255.0
    - > no shut
    - > exit
    - > config t
    - > interface fa 0/0.1
    - > encapsulation dot1q 20
    - > ip address 192.168.20.1 255.255.255.0
    - > no shut

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Ping message from PC to another VLAN PC

Ping output

Packet Tracer PC command line 1.0

PC > Ping 192.168.20.3

Pinging 192.168.20.3 with 32 bytes of data:

Request timed out

Reply from 192.168.20.3: bytes=32 time=0ms TTL=127

Reply from 192.168.20.3: bytes=32 time=5ms TTL=127

Reply from 192.168.20.3: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.20.3

Packets: Sent = 4, Received = 3, lost = 1 (25% loss)

Approximate round trip times in milliseconds:

Minimum = 0ms, Maximum = 5ms, Average = 1ms

LAN database  
ted.  
following

### Observation:

VLAN is a custom network which is created from one or more local area networks. It enables a group of devices available in multiple networks to be combined into one logical network. The result becomes a virtual LAN that is administered exactly like a physical VLAN. It is a virtual extension of LAN.

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TTL=127

TTL=127

TTL=127

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## Topology and output screenshots:

The screenshot shows the Cisco Packet Tracer Student interface. The main workspace displays a network topology with a central switch (Switch0) connected to four PCs (PC0, PC1, PC2, PC3) and a router (Router0). The router is connected to the switch via its Fa0/1 interface. The switch has four Fa0/24 interfaces connected to the PCs. The interface is set to 'Logical' view.

The Simulation Panel on the right shows the Event List with the following data:

Vis.	Time(sec)	Last De	At Dev	Type	Info
	0.001	--	PC0	ICMP	
	0.002	PC0	Switch0	ICMP	
	0.002	Switch0	Router0	ICMP	
	0.003	Switch0	Router0	ICMP	
	0.003	Router0	Switch0	ICMP	

The Play Controls section shows 'Auto Capture / Play' and 'Capture / Forward' buttons. The Event List Filters section shows 'Visible Events' and 'Edit Filters' buttons.

The bottom status bar shows the time as 00:01:09.907, the power cycle devices button, and the simulation controls. The system tray shows the temperature as 23°C and the date as 02-09-2023.

The screenshot shows the Cisco Packet Tracer Student interface with the same network topology as the first screenshot. A PC0 command prompt window is open, showing the results of a ping command to 192.168.20.3.

```

Packet Tracer PC Command Line 1.0
PC>ping 192.168.20.3

Pinging 192.168.20.3 with 32 bytes of data:

Reply from 192.168.20.3: bytes=32 time=2ms TTL=127
Reply from 192.168.20.3: bytes=32 time=0ms TTL=127
Reply from 192.168.20.3: bytes=32 time=5ms TTL=127
Reply from 192.168.20.3: bytes=32 time=0ms TTL=127

Ping statistics for 192.168.20.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 5ms, Average = 1ms
PC>
    
```

The bottom status bar shows the time as 00:01:19, the power cycle devices button, and the simulation controls. The system tray shows the temperature as 23°C and the date as 02-09-2023.