



# **NATIONAL UNIVERSITY OF MODERN LANGUAGES**

## **Computer Networks lab Report - 6**

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**PROGRAM:** BSSE (5th Semester)

**COURSE:** Computer Networks

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# Lab Report – VLAN Configuration

## 1. Objective

To understand VLAN (Virtual Local Area Network) concepts and configure VLANs on a Cisco switch to divide one physical network into multiple logical networks for better security, efficiency, and management.

## 2. Tools and Equipment

- Cisco Packet Tracer
- Cisco Switch (2960)
- PCs with Ethernet cables
- Console cable
- Command Line Interface (CLI)

## 3. Description

A VLAN separates a single physical network into smaller logical networks. It is commonly used in organizations to isolate departments (e.g., HR, Accounts, IT) for improved security and reduced broadcast traffic. VLANs enable better control and cost-effective network management using the same hardware.

## 4. Working Summary

VLANs were created and specific ports were assigned using switch configuration commands. The show vlan brief command verified successful creation and activation of VLANs on their respective ports.

## 5. Conclusion

The lab demonstrated how VLANs enhance network organization, security, and performance by reducing broadcast domains and isolating traffic between departments.

```
Switch>
Switch>
Switch>
Switch>
Switch>
Switch>enable
Switch#conf
Switch#config
Switch#configure t
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 2
Switch(config-vlan)#name building1
Switch(config-vlan)#exit
Switch(config)#vlan 3
Switch(config-vlan)#name building2
Switch(config-vlan)#exit
Switch(config)#
Switch(config)#
Switch(config)#
```

```

Switch#configure t
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#in
Switch(config)#interface fa
Switch(config)#interface fastEthernet 0
Switch(config)#interface fastEthernet 0/1
Switch(config-if)#wsi
Switch(config-if)#swi
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vl
Switch(config-if)#switchport access vlan 2
Switch(config-if)#exit
Switch(config)#interface fastE
Switch(config)#interface fastEthernet 0/2
Switch(config-if)#switch
Switch(config-if)#switchport acc
Switch(config-if)#switchport access vlan
Switch(config-if)#switchport access vlan 2
Switch(config-if)#exit
Switch(config)#interf
Switch(config)#interface fas
Switch(config)#interface fastEthernet 0/3
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vl
Switch(config-if)#switchport access vlan 3
Switch(config-if)#exit
Switch(config)#int
Switch(config)#interface f
Switch(config)#interface fastEthernet 0/4
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vl
Switch(config-if)#switchport access vlan 3
Switch(config-if)#exit
Switch(config)#

```

```
Switch#show vlan brief
```

| VLAN | Name               | Status | Ports   |
|------|--------------------|--------|---|
| 1    | default            | active | Fa0/5, Fa0/6, Fa0/7, Fa0/8<br>Fa0/9, Fa0/10, Fa0/11, Fa0/12<br>Fa0/13, Fa0/14, Fa0/15, Fa0/16<br>Fa0/17, Fa0/18, Fa0/19, Fa0/20<br>Fa0/21, Fa0/22, Fa0/23, Fa0/24<br>Gig0/1, Gig0/2 |
| 2    | building1          | active | Fa0/1, Fa0/2  |
| 3    | building2          | active | Fa0/3, Fa0/4  |
| 1002 | fddi-default       | active |   |
| 1003 | token-ring-default | active |   |
| 1004 | fddinet-default    | active |   |
| 1005 | trnet-default      | active |   |

| Fire | Last Status | Source | Destination | Type | Color | Time(sec) | Periodic | Num | Edit   | Delete |
|------|-------------|--------|-------------|------|-------|-----------|----------|-----|--------|--------|
|      | Successful  | PC0    | PC1         | ICMP |       | 0.000     | N        | 0   | (edit) |        |
|      | Failed      | PC1    | PC2         | ICMP |       | 0.000     | N        | 1   | (edit) |        |
|      | Successful  | PC3    | PC2         | ICMP |       | 0.000     | N        | 2   | (edit) |        |

