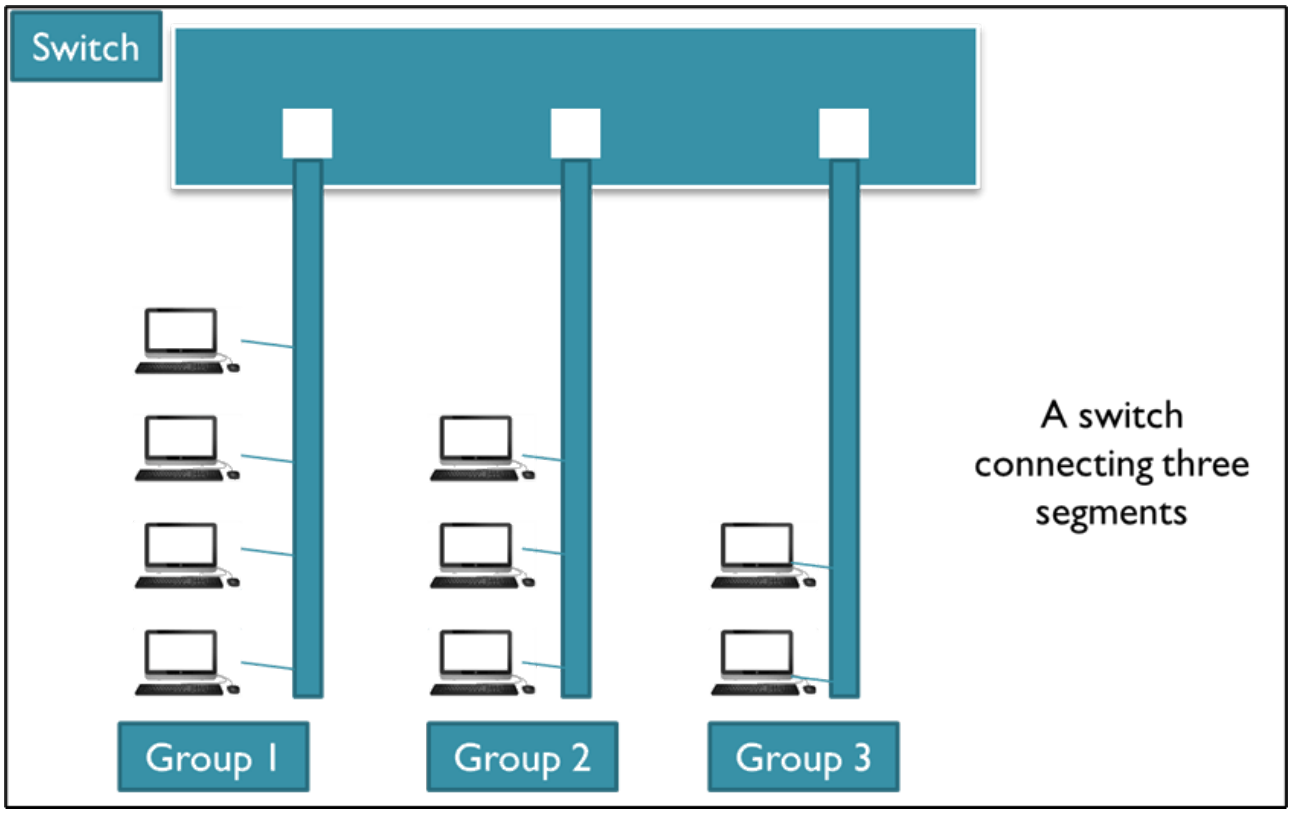
Virtual LAN: Introduction on VLAN, Types of VLANs and VLAN Characteristics

Topics

- Introduction on VLAN
- Working with examples
- Types of VLANs
- Characteristics
- Advantages

Introduction on VLAN

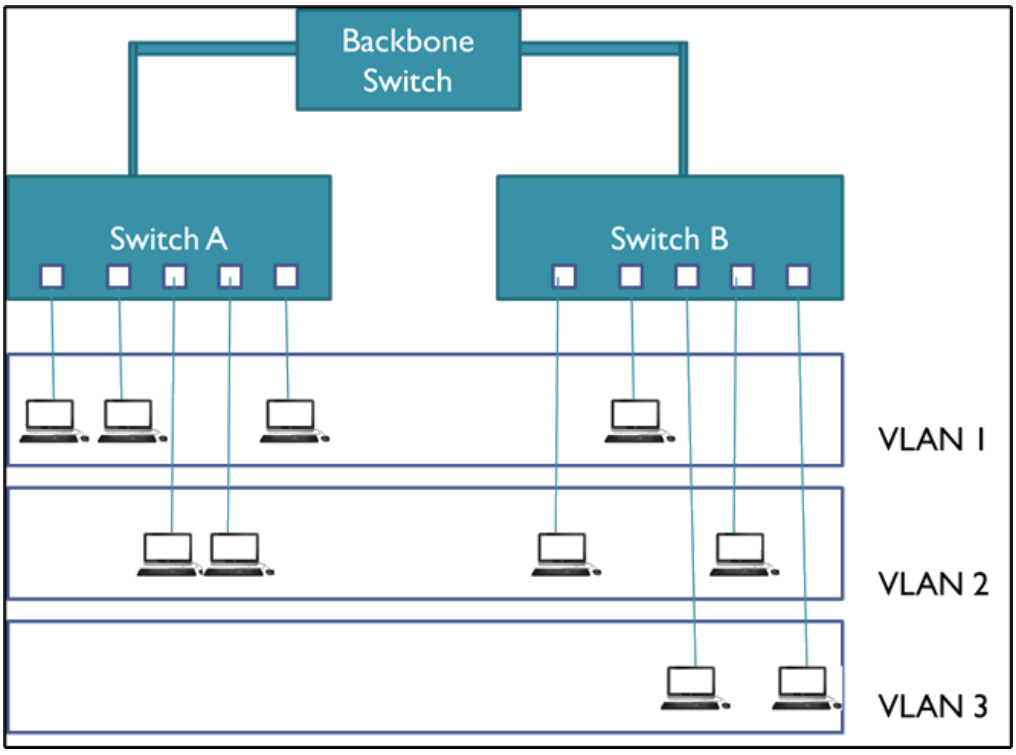
- VLAN stands for 'Virtual Local Area Network' .
- It is a subnetwork, or a segment of a local area network configured by software, not by physical wiring.



- Reason for segmentation is to make broadcasting possible at the Data Link Layer.
- The stations in each segment from a group that can be the recipient of a broadcast message.
- The message can come from some station in the group or from another outside of the group.
- The idea of VLAN technology is to divide a LAN into logical, instead of physical, segments.
- The group membership in VLAN's is defined by software, not hardware.

Example: If a person moves from one group to another, there is no need to change the physical configuration.

Two Switches in a Backbone Using VLAN Software



Types of VLANs

- A Protocol VLAN- which has traffic handled based on its protocol.
- Static VLAN- also referred to as port-based VLAN, needs a network administrator to assign the ports on a network switch to a virtual network.
- Dynamic VLAN- allows a network administrator just to define network membership based on device characteristics, as opposed to switch port location.

VLAN Characteristics

- Membership: Different vendors use different characteristics such as port number, MAC addresses, IP addresses, etc.
- Port Number: some uses switch port number as a membership.
- MAC addresses

- Combination
- Combination between switches
  - Time-Division Multiplexing (TDM)
  - Frame Tagging
- IP Addresses
- Multicast IP Addresses

Configuration

- Manual Configuration
- Automatic Configuration
- Semiautomatic Configuration

Advantages

- Reduce cost
- Reduce time
- Creating virtual workgroups
- Security
- Reduce network traffic

MCQ

Q1. VLAN technology divides a LAN into_____ segments.

1. Physical
2. Logical
3. Multiplexed
4. Framed

Answer: B. Logical

Q2. In a VLAN, the stations are separated into groups by_____ .

1. Physical methods
2. Software methods
3. Locations
4. Switches

Answer: B. Software Methods

#VLAN

#How it works

#Types of VLANs

#Characteristics

#Advantages

-Mayank