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Virtual LAN Introduction of VLAN and Types of VLAN

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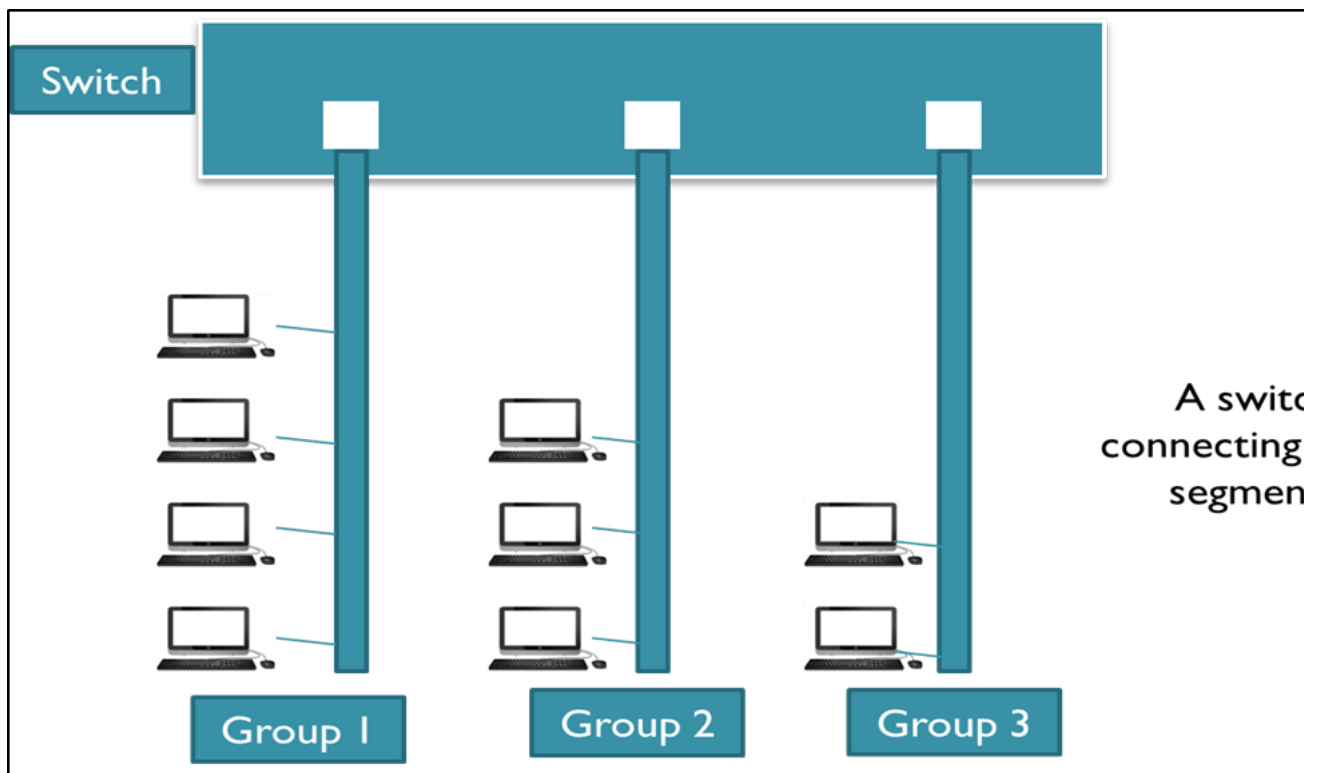
Virtual LAN

Topics:

1. Introduction on VLAN
2. Working with examples
3. Types of VLANs
4. Characteristics
5. Advantages

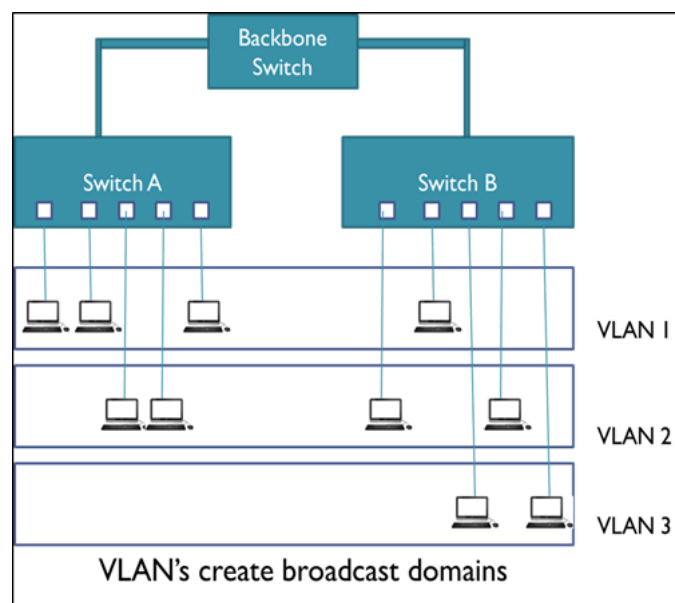
Introduction on VLAN

- 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 form 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: 2

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

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

Answer: 2

#VLAN

#How it works

#Types of VLANs

#Characteristics

#Advantages

 Mayank