

# Vlan college essay



Introduction Virtual Local Area Network or VLAN is a logical local area network.

VLAN extends beyond a single traditional LAN to a group of LAN segments. VLAN is unique because it is a logical entity, where configuration is done in software. This paper will explain the benefits of VLAN and how implementing VLAN would benefit any company. Benefits of Creating a VLAN As organizations grow in size, users, and departments, they must keep network activity and performance working effectively and efficiently. Implementing VLAN will provide the following benefits: •Increased performance •Improved manageability •Network tuning and simplification of software configurations •Physical topology independence •Increased security options There will be an increase in performance because collision domains will be reduced in size.

Grouping users into logical networks will also increase performance by limiting traffic. VLAN will provide an easy, flexible, and less costly way to modify logical groups. There are also more manageable by allowing the configuration of devices. Network tuning and simplification of software configurations allow LAN administrators to make changes to their networks by grouping users. By grouping users or departments into a single subnet will allow IP addresses, subnet masks, and network protocols to be more consistent across the entire VLAN.

VLAN will provide an independence from the physical topology of the network. This is done by allowing physically workgroups to be connected within a single broadcast domain. With the physical infrastructure in place, ports can be added in new locations to existing VLANs if a department

expands or relocates. Additional security can be added by implementing VLANs. Allowing a network administrator to separate users can be done by requiring access to important information.

**Broadcast Domains** As a broadcast domain, VLAN consists of a group of end-stations. These end-stations are located in different physical locations and communicate with each other. Traffic is usually contained in a VLAN.

Broadcast packets can be transferred to any workstation in a broadcast domain.

This means that performance will be reduced if not properly managed. By splitting these broadcast domains into four segments, performance will be enhanced and bandwidth consumption will be reduced. Security Because each department is split into four sections, the network will be more secure. Each segment will be separate from the rest and access will be restricted to only those who have access to it. This enhances security and ensures that only those users with access can access important information and data.

**VLAN Membership** Using a port assigned based VLAN will allow those users working outside of the original organization access to the network. This type of membership will allow administrators of the network the ability to locate a user without affecting the network or its resources. **Trunking** The Trunking protocol that should be used is IEEE 802.1Q. This protocol will reduce dependency on any single vendor and is more cost effective.

**VLAN Trunking Protocol** adds speed and efficiency to a network. It also reduces administrative overhead that is required. **Switches** Switches on the network should be configured in two ways: at the VTP server and VTP clients.

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The VTP Server mode can be used to administer the VLAN and VTP. Changes to the VTP should only be made in VTP Server mode.

Backup Plan A star topology should be used in the absence of the VLAN and VTP when they are reconfigured or repaired. This will act as a back up to the VLAN operating model and ensures that the network will continue to operate properly. Conclusion For any organization to be efficient implementing a VLAN will reduce requirements and provide future growth of an organization. If organized correctly, organizations will benefit from the implementation of a VLAN.