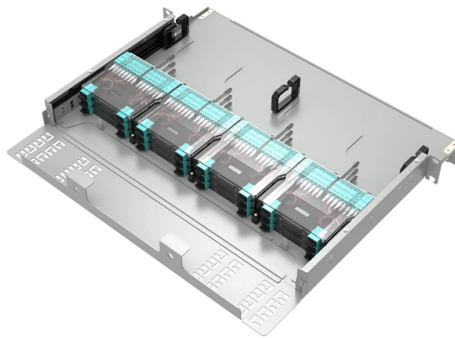


How to configure the network segment on the core switch



Overview

This post will deal with creating Layer 2 VLANs on Cisco switches and performing all relevant configurations.

Key Takeaways

Network segmentation on core switches is achieved using VLANs, subnetting, and Layer 3 routing to isolate traffic, enhance security, and optimize performance. Key Steps for Network Segmentation

1. Define VLANs for Each Segment Create VLANs to logically separate network traffic. Each VLAN represents a distinct broadcast domain, isolating devices within the same segment. For example, you might create VLAN10 for finance, VLAN20 for IT, and VLAN30 for guest access. Assign switch ports to the appropriate VLANs based on device roles or physical location .
2. Assign IP Subnets Each VLAN should have a unique IP subnet. This allows Layer 3 routing between VLANs and ensures proper addressing. For instance, VLAN10 could use 192.168.10.0/24, VLAN20 192.168.20.0/24, and VLAN30 192.168.30.0/24 .
3. Configure Layer 3 Interfaces On a Layer 3 core switch, create VLAN interfaces (SVIs) for each VLAN and assign the corresponding IP address. This enables inter-VLAN routing and allows devices in different segments to communicate through the core switch. Example configuration:

```
interface Vlan10 ip address 192.168.10.1 255.255.255.0 no shutdown
interface Vlan20 ip address 192.168.20.1 255.255.255.0 no shutdown
```

Set the default gateway for access switches to the corresponding VLAN interface on the core switch . 4. Implement Access Control Lists (ACLs) Use ACLs to control traffic between VLANs. This allows you to restrict access to sensitive segments, such as finance or servers, while permitting necessary communication. ACLs can filter traffic based on IP addresses, ports, and protocols . 5. Configure Trunk Links Between Switches Use VLAN trunking on uplinks between core and aggregation/access switches to carry multiple VLANs. Ensure proper tagging (e.g., 802.1Q) and consider using link aggregation (LACP) for redundancy and higher bandwidth . 6. Plan for Redundancy and High Availability Deploy multiple core switches in a redundant configuration. Use protocols like HSRP, VRRP, or GLBP for gateway redundancy, and ensure that routing between VLANs is resilient to switch failures . 7. Optional: Software-Defined Segmentation For advanced environments, consider software-defined segmentation using Security Group Tags (SGTs) or centralized policy management. This allows dynamic classification of traffic based on user identity, device type, or location, simplifying policy enforcement across the network .

Best Practices

- Keep VLANs logically grouped by function or security level.
 - Minimize the number of VLANs per switch to reduce complexity.
 - Document VLAN IDs, subnets, and ACL rules for easier management.
 - Monitor traffic and adjust ACLs or QoS policies to optimize performance.
 - Test inter-VLAN routing and ACLs in a lab environment before deployment.
- By following these steps, core switches can effectively segment the network, improve security, reduce broadcast traffic, and simplify management while maintaining high performance and scalability .

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routing at the distributionCore switch

The network diagram is attached (Cores switches are 4506): My question is what is the best solution for users

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We have a existing network setup where we have two D-Link switches,connected to each other. IPs are manually assigned in the

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The only other option I can think of, is using ACL's on the core switches - but they don't offer the same level of flexibility and

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How would I use them as core switches? I was hoping someone could point me in the right direction on the best way

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