

Core Switch Interconnection VLANs



Overview

Configuring the Core Switch Configure interfaces for interconnecting the core switch with firewalls. # Create interconnection VLANs on the core Core Switch.

Key Takeaways

Inter-VLAN routing enables devices in separate VLANs to communicate by routing traffic at Layer 3, typically using a Layer 3 switch or a router. Understanding VLAN Isolation

By default, VLANs are isolated broadcast domains, meaning devices in one VLAN cannot communicate with devices in another VLAN. This isolation improves security and reduces unnecessary broadcast traffic, but it requires Inter-VLAN routing to allow cross-VLAN communication .

Methods for Inter-VLAN Routing

- Router-on-a-Stick (RoAS)
- Uses a single physical router interface divided into subinterfaces, each assigned to a VLAN.
- A trunk link connects the router to the switch, carrying multiple VLANs using 802.1Q tagging.
- Best for small networks but can become a bottleneck in larger environments .
- Layer 3 Switch (SVI-Based Routing)
- A multilayer switch can perform both Layer 2 switching and Layer 3 routing.

- Each VLAN has a Switched Virtual Interface (SVI) configured with an IP address, acting as the default gateway for that VLAN.
- Traffic between VLANs is routed internally at hardware speed, providing higher performance and scalability .
- Steps include creating VLANs, configuring SVIs, assigning access ports, and enabling IP routing with the ip routing command .
- External Router with Multiple Interfaces
- Each VLAN is connected to a dedicated physical router interface.
- Less common today due to cost and cabling complexity, but still viable for certain designs .

Best Practices

- Use trunk ports for VLAN interconnection and ensure the native VLAN is consistent across trunk links to prevent traffic leaks .
- Secure trunk links by allowing only necessary VLANs and avoiding unnecessary trunking.
- Enable IP routing on Layer 3 switches to allow VLANs to communicate.
- Apply Quality of Service (QoS) to prioritize critical traffic, especially for voice or video VLANs .
- Monitor performance and avoid single points of failure in router-on-a-stick setups. Layer 3 switches are preferred for enterprise-scale networks due to higher throughput and reliability .

Summary

To interconnect VLANs on a core switch, the most efficient and scalable approach is to use a Layer 3 switch with SVIs, enabling high-speed routing between VLANs while maintaining VLAN isolation and security. For smaller networks, a router-on-a-stick configuration can suffice, but careful attention to trunking, native VLANs, and interface speed is essential to avoid bottlenecks and misconfigurations .

Article Content

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VLAN Configuration Guide

VLANs allow you to separate network devices into distinct groups, even if those devices connect to the same physical

Solved: interconnecting two core switches

I allowed one single vlan just to make sure the link is working but you can suggest me the right way to do so. The idea

InterVLAN Routing

In this lesson you will learn about the different options there are for routing between VLANS: Router on a stick, SVI interface or L3

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This article provides a step-by-step walkthrough, including configuring VLANs on a Cisco switch, setting up trunk

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How to configure two Core switches in a network with intervlan routing ...

Dear All, Hi Friends, i have two 3750 switches. I configured intervlan routing between three vlans which are

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Inter-VLAN Routing using Layer 3 Switches (4.3)

In these very large networks, network administrators use Layer 3 switches to configure inter-VLAN routing. Inter-VLAN routing using

Configure Inter VLAN Routing with Multiple Switches

With multiple switches generally you still set one switch (your core or distribution) switch as the switch operating at

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Pleas help me 100K sub / @tankirivann Hi everyone, in this video we are going to

Inter VLAN Routing Explained for Network Pros.

Inter-VLAN routing allows devices in different VLANs to communicate with each other using

Core Switch & VLANNING

Hi folks - don't flame me too bad but some questions rolling around I have to ask on how you do this in the real world.I

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Inter-VLAN Routing

Inter-VLAN routing enables routers or Layer 3 switches to route traffic between VLANs. Because the use case is so common,

Inter-VLAN routing by Layer 3 switch | N-Study

In order to interconnect VLANs (networks) with Layer 3 switches, it is important to know how to configure IP addresses. There are two

Basic Network Design question

We can create a couple of SVIs (switched virtual interfaces) at the Core L3 switch so that it will function as the default

Configure Spanning Tree for intervlan routing core switch and L2 ...

Layer 3 core switch: Cisco SG550xg: Vlan 10, 20, 30, 40, 50 interfaces (SVI) with inter-vlan routing enabled Layer 2

Do I have to configure new VLANs on the core switch?

If the access/distribution switches connect the user vlans to the core using access ports (per vlan) then you will need to

Solved: VLAN in CORE SWITCH | Experts Exchange

My core switch Cisco 4507R and I have idea to create Layer 3 VLANs and use normal router ACL with "in" Direction

Understanding VLANs and Inter-VLAN Routing

Understanding VLAN tagging is essential for implementing more advanced networking concepts like inter-VLAN

creating Vlan at Core layer switches ?

Is there a need to create vlans at core layer switches ? If yes what are the pros and cons for this practice ? Actually i

How to configure VLAN with 3 cisco switches, core switch and ASA5510

Cisco Community Technology and Support Networking Switching How to configure VLAN with 3 cisco switches, core

VLAN Trunking

This lesson discusses VLAN trunking - a technology that switches use to carry traffic for multiple VLANs over a single physical link

Integration between two entities having different Core switches

Edited For explanation: Hi, We were trying to integrate two entity having different Core switches at both sites. Demo

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InterVLAN routing using Layer 3 switch | NetworkAcademy.IO

They are commonly used in enterprise LANs, especially in distribution and core layers. Layer 3 switches made the three-tier network

Routing Between VLANs & Layer 3 Switches

Routing Between VLANs & Layer 3 Switches Routing Between VLANs & Layer 3 Switches We wrote an article which covers Virtual

Trunking/routing vlans from core switch puzzle

We have two 6509 switches as our core network. These two switches are a hsrp pair, one upstairs, one downstairs.

Where to do inter-VLAN routing? (core/distribution/access)

So we need to do inter-VLAN routing between two VLANs (VLAN 20 and VLAN 600). From a best practice

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