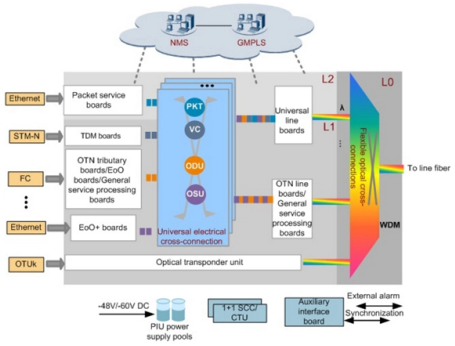
Switch Core Redundancy Configuration



Overview

In the core layer, I want to have redundancy, which means that if the main core switch of my network has a problem, the backup switch will automatically enter the circuit.

Key Takeaways

Core switch redundancy ensures continuous network availability by using backup switches, link aggregation, and high-availability protocols like HSRP, VRRP, VSS, or MC-LAG.

Key Principles of Core Switch Redundancy

Redundancy in the core layer is designed to eliminate single points of failure. This involves deploying two or more core switches that can take over traffic seamlessly if one fails. Redundant designs typically include: Dual core switches connected via Layer 2 or Layer 3 links.

Redundant uplinks from access and distribution switches to both core switches. High-availability protocols to manage failover and load balancing.

Hardware Strategies

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Switch Stacking or Virtual Switching Systems (VSS)VSS or stackable switches allow two physical switches to operate as a single logical unit, simplifying management and providing seamless failover without re-convergence of the network. Each access switch connects to both core switches using port channels, ensuring traffic continues even if one core switch fails.vPC (Virtual Port Channel)vPC allows link aggregation across two separate switches, enabling load balancing and redundancy while maintaining a single logical connection to downstream devices. Ideal for environments where core switches are geographically separated but connected via high-speed fiber.

MC-LAG (Multi-Chassis Link Aggregation)MC-LAG combines two physical switches into a single logical switch for link aggregation, providing instant failover for ports, links, or entire switches. Often used in high-capacity enterprise networks to maintain uptime during hardware failures. Software and Protocol ConfigurationsHSRP (Hot Standby Router Protocol) / VRRP (Virtual Router Redundancy Protocol)These Layer 3 protocols provide active-passive failover for default gateways.

HSR

P can be configured on SVIs (Switched Virtual Interfaces) for VLANs carried over trunk links, allowing redundancy even when core switches are connected via Layer 2 trunks. Spanning Tree Protocol (STP / RPVST)STP prevents loops in networks with redundant paths. Rapid Per-VLAN Spanning Tree (RPVST) is recommended for faster convergence and to control root bridge placement, ensuring predictable traffic paths.

Port Channels / EtherChannelsAggregating multiple physical links into a single logical link increases bandwidth and provides redundancy. Critical for connecting access/distribution switches to both core switches.

Best Practices

Dual uplinks: Connect all access and distribution switches to both core switches using port channels. Layer 2 heartbeat: Maintain a Layer 2 link between core switches for HSRP or vPC communication. Load balancing: Use multiple HSRP groups or vPCs to distribute traffic across cores.

Hot-swappable components: Ensure power supplies and fans are redundant to prevent downtime. Documentation and planning: Map all devices, VLANs, and critical paths to identify where redundancy is most needed.

Summary

To configure redundancy for core switches effectively: Deploy dual core switches with high-speed interconnects.

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Use VS

S, vPC, or MC-LAG to create a logical unit for seamless failover. Configure HSRP/VRRP for gateway redundancy and STP/RPVST for loop prevention. Connect all downstream switches with port channels to both cores.

Ensure hot-swappable hardware and maintain proper documentation. This approach ensures high availability, minimal downtime, and efficient traffic handling across your network.

Article Content

Solved: redundancy in core layer

In the core layer, I want to have redundancy, which means that if the main core switch of my network has a problem, the backup switch will automatically enter the circuit.

Solved: core switch redundancy

Does the core have 2 sups that would provide some level of redundancy once it had to power supplys with separate feeds that would just leave the chassis as only point of failure and they

How to Configure Redundant Switches in Cisco Networks

This article will guide you through the essential steps, necessary commands, configurations, and best practices for configuring redundant switches

How to Configure Redundant Switches in Your Network

Let''s dive into a detailed, step-by-step guide on setting up redundant switches, covering both the hardware setup and software configurations.

Redundant switch configuration for small network rack

Installing two new firewalls that work together in a master/slave configuration, so we have redundancy at our firewall level. Our service provider has already provided us with two different links

Designing a redundant switching infrastructure

Essentially we will have two core 24 port switches, which we would like to put into high availability. My idea would be to use MLAG, but I''m looking for guidance in that regard.

Core switch redundancy

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Going with mixed vendor at the core seems like you''re doing a lot more work than necessary just keeping the two switches consistent. It''s not like you can just copy and paste the

The Complete Solutions Guide to a Redundant Switched Topology –

We provide the reasons for implementing a redundant network, the benefits, the side effects, and the solution for avoiding Layer 2 loops.

Optimizing Cisco Switches for High Availability and Load Balancing

Use features like redundant power supplies, multiple uplinks, and standby switches configured with protocols such as HSRP or VRRP for gateway redundancy. Furthermore, ensure

Solved: Redundant links between switches

So in my building I have a switch closet on each floor with a stack of 3750''s. Each floor switch stack has a single fiber link to the core switch (3750) in the server room. Both switches are L3

core switch redundancy

The switches in a stack can all be used to forward traffic, every port is available to configure and use as a normal switch. If the master switch fails then the next member based on

Solved: Redunancy with two switches core

Hello everyone, I have a customes have just bougth ttwo switches core (L3), his today diagram network is: Access Switches come to one Switch Core and this connect to a Firewall to

Core switch redundancy

Hi, A school with around 800 users having one core switch 6509-E sup-720 (inter-vlan routing) collapsed core design connected to - 30 layer 3 HP switches with 10G and 1G backup links -

Configuring 1:1 Redundancy

Prerequisites for 1:1 Redundancy All the switches in the stack must be running the same license level as the active switch. For information about license levels, see the System Management Configuration

How to Configure Redundant Switches in Your Network

Software Configuration for Redundant Switches Basic Configuration of Switches Implementing Redundancy Protocols Quality of Service (QoS) and

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What is the correct way to configure redundant access switches ...

What I''d like to know is: if I buy two Layer 3 switches such as the SG550X, what is the best way to configure redundancy to the servers they''re connected to? The best option I found was

redundancy of 2 core switches

Hi, im new to this. If i got 3 switches , i need to use 1 as a layer 3 switch so that data vlan can communicate with voice vlan. however, if this core die, my whole network die. how can

Redundant Core switches and Single Router Design

Hello Everyone, I am working on one design and need support for connectivity between two core switches and router. As shown in the attached diagram, it has two 4506E core switches and

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

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Website: https://aboutkitchens.biz
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North American project location: Research Triangle Park, North Carolina, United States

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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