

Dual-core switch configuration



Overview

I want to provide best redundancy for an access switch (Cisco 3650) when connecting to two core switches (Cisco 9500 series), as show in attached topology.

Key Takeaways

Dual-core switches are typically configured for redundancy and high availability using inter-switch links, link aggregation, and routing protocols like OSPF or VRRP.

Core Switch Pairing and Redundancy

For a dual-core setup, the core switches are often configured as a logical pair to provide seamless failover. In Aruba networks, this is achieved using VSX (Virtual Switching Extension), which allows the two core switches to operate as a single logical entity for Layer 2 aggregation and Layer 3 routing. In Cisco environments, similar functionality can be achieved using VSS (Virtual Switching System) or stacking, enabling port-channel uplinks from access switches to both cores.

Inter-

Switch Links and Link Aggregation
Inter-Switch Link (ISL): Create a dedicated link or aggregated link (LAG/port-channel) between the two core switches to synchronize routing and forwarding information. Link Aggregation: Use LAG or EtherChannel to combine multiple physical links into a single logical link, increasing bandwidth and providing redundancy. This is applied both between core switches and from access switches to the core.

VLA

Ns: Assign VLANs to the inter-switch links to carry traffic for multiple Layer 2 segments and routed transit paths.

Each VR

F may require a separate VLAN.

Routing and Gateway Redundancy

Routing Protocols: Implement OSPF, EIGRP, or BGP between the core switches and upstream devices (firewalls, routers) to ensure dynamic path selection and failover. Gateway Redundancy: Use HSRP, VRRP, or GLBP to provide a virtual default gateway for hosts, ensuring continuous Layer 3 connectivity if one core switch fails. Cost Control: Adjust OSPF or routing metrics to control preferred paths and load balancing between cores.

Access-to-

Core Connectivity

Trunk Links: Configure access switches with trunk ports to carry multiple VLANs to both core switches. If cores are a logical pair (VSX/VSS), a single port-channel can span both cores. Spanning Tree Considerations: If cores are not logically paired, use RSTP or MSTP to prevent loops and designate primary/secondary root bridges on the core switches.

Redundant Uplinks: Allocate multiple uplinks from access switches to cores to ensure failover and load balancing. Two uplinks are generally sufficient for most deployments. Management and Monitoring Out-of-Band Management: Use dedicated management interfaces for monitoring and VSX keepalives to maximize data plane ports for traffic.

I

P Addressing: Assign static IPs or DHCP reservations for management interfaces to ensure predictable connectivity and enable centralized management via platforms like Aruba Central. Configuration Tools: Use CLI, MultiEdit, or centralized management tools to apply consistent configurations across both core switches, reducing errors and simplifying troubleshooting.

Best Practices Summary

Configure core switches as a logical pair (VSX or VSS) for redundancy. Use LAG/port-channel for inter-core links and access-to-core uplinks. Implement dynamic routing (OSPF/EIGRP) and gateway redundancy (HSRP/VRRP).

Assign VLA

Ns per VRF or traffic type and ensure proper trunking. Use RSTP/MSTP if cores are not logically paired to prevent loops. Reserve management IPs and use out-of-band interfaces for monitoring.

Document all connections and maintain consistent port selection for easier troubleshooting. This configuration ensures high availability, load balancing, and simplified management for dual-core switch deployments in both data center and campus networks.

Article Content

Recommendations: Dual Core Switch for redundancy.

Make sure you designate the primary root bridge and the secondary on your core switches and configure the appropriate port roles and security controls in place from rouge stp

Two-Tier Core

Configure Two-Tier core switches as a VSX pair for Layer 2 aggregation of the data center access switches, IP data center services, and

Edge switch redundancy to two core switches

I want to provide best redundancy for an access switch (Cisco 3650) when connecting to two core switches (Cisco 9500 series), as show in attached topology. My plan is to configure 2

Connectivity Design | Validated Solution Guide

Each ToR switch is dual-homed to a data center core using Layer 2 VSX/MC-LAG links. Using Layer 2 between the core and server access layers supports VLAN ubiquity, and loops are

Redundant switch configuration for small network rack

Setup two network switches that will each connect to the servers so that if a network switch should fail, its business as usual, even if at a reduced capacity. Fig 2 partially completed new

PA-Aggregate-Group-Configuration-Dual-Uplink-Core-Switch

This single core switch is now getting replaced by 2 Huawei core switches, both in active-active mode. We have tested the 1 up-link scenario to firewall and is working as expected.

Dual-Switch Configuration

Dual-Switch Configuration This example shows a dual-switch configuration, with the servers configured in between the two switches as the "bump". Each server is dual homed. LBG are formed in a

How to configure redundant core switch in collapsed core?

I want a second core switch (Core 2) to be able to take/distribute load while acting like a backup switch if Core1 goes down. Each access switch should have a redundant link to both Core1 and Core2.

How to Configure a Cisco Switch in 10 Steps

Whether you're configuring a single switch for a small office or managing a more complex network with multiple switches, you'll learn how to use the Cisco Command Line Interface (CLI) to

How to Configure a Cisco Switch (step by step)

If you're looking to configure a switch for the first time, this post is for you. Learn step-by-step configuration commands for Cisco IOS Switches.

Catalyst 2948G-L3 Sample Configurations

Introduction This document provides three sample configurations for the Catalyst 2948G-L3. The configurations are a single-VLAN network, a multi-VLAN network, and a multi-VLAN distribution layer

Features and Applications of Core Switches

Core Switches also provide intelligent routing, QoS assurance, security, scalability, and manageability. A well-matched Core Switch configuration is a strong support for building powerful,

8 Steps to configure your network switch

Learn how to setup a network switch with ease. Switches allow you to send and receive information efficiently and securely. Get setup today!

How to Configure a Cisco Switch in 10 Steps

Learn how to Configure a Cisco Switch. Follow along this Step-by-Step guide that will get you using Commands via PuTTY CLI

PA-Aggregate-Group-Configuration-Dual-Uplink-Core-Switch

Dear Abdul, Thanks for the update. Both switches are in stack. For my case can you please guide me through step by step for this configuration. Currently port #1 is configured and is

Understanding the Core Switch: Key Differences and Uses

Explore the core switch's role as the backbone of your network. Discover key differences, uses, and insights into layer 3 core switch technology.

Solved: core switch redundancy

Hi, 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

Solved: Redunancy with two switches core

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

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

