Link aggregation between core switches

Overview

What Is an Aggregation Switch and How to Choose?

Discover the role of aggregation switches. Explore differences between aggregation, access, and core switc.

Key Takeaways

Link aggregation on core switches combines multiple physical links into a single logical connection to increase bandwidth, provide redundancy, and ensure high availability.

Overview of Link Aggregation

Link aggregation, also known as switch aggregation, trunking, or port channeling, is a method to combine multiple network connections in parallel. This approach increases total throughput beyond what a single link can handle, provides redundancy in case one link fails, and enables load balancing across all aggregated links. A Link Aggregation Group (LAG) is the logical collection of these physical ports, which can be configured using vendor-independent standards like Link Aggregation Control Protocol (LACP) or proprietary protocols.

Role in Core Switches

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Core switches serve as the backbone of a network, connecting aggregation switches and providing high-speed, low-latency routing for all traffic. Implementing link aggregation at the core layer allows multiple uplinks from aggregation switches to be combined, which: Increases bandwidth: Multiple physical links act as a single high-capacity connection, supporting high traffic loads. Enhances redundancy: If one link or port fails, traffic automatically reroutes over remaining links, maintaining network uptime.

Supports load balancing: Traffic is distributed across all aggregated links, preventing bottlenecks. Simplifies management: Aggregated links can be managed as a single logical interface, reducing administrative complexity.

Advanced Aggregation Techniques

For high-availability networks, Multi-Chassis Link Aggregation (MC-LAG) allows two physical core switches to operate as a single logical unit. This enables link aggregation across both switches, providing near-instant failover in case of a port, link, or entire switch failure. MC-LAG is particularly useful in enterprise and data center environments where downtime must be minimized.

Best Practices

Use LAC

P for dynamic link aggregation, which automatically detects and manages link failures. Pair aggregation with redundancy: Combine MC-LAG or dual-homed access switches to ensure continuous connectivity. Monitor bandwidth and load: Ensure aggregated links are balanced and not oversubscribed.

Layered architecture: Implement access, aggregation, and core layers to optimize scalability and performance. By implementing link aggregation on core switches, networks achieve higher throughput, improved resilience, and simplified management, making it a critical strategy for modern enterprise and data center networks.

Article Content

What Is an Aggregation Switch and How to Choose?

Discover the role of aggregation switches. Explore differences between aggregation, access, and core switches, and choose the right model for your network.

Core, Aggregation, or Access Switches? Choose the

Discover the crucial differences between core, aggregation, and access switches. Find out which type can best transform your network''s

Link Aggregation and Load Balancing

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You may want to set up and configure a bonded link between your Meraki MS switch and a Cisco switch. This is often referred to as link aggregation, link bonding or EtherChannel.

Link Aggregation: Static vs Dynamic, LACP, and MLAG

This article provides a comprehensive explanation of link aggregation — covering LACP, static vs dynamic link aggregation, and MLAG

Two-Tier Core

To establish a VSX relationship between the core switches, create a link aggregation (LAG) interface for assignment as the VSX data plane''s inter-switch link (ISL). The LAG can be

Configuring Link Aggregation Group and Link Aggregation Control

This chapter describes Link Aggregation Group, Link Aggregation Control Protocol, and manual load balancing. This chapter also describes the configuration procedures.

Solved: Stacking and Lag

Setting up an MLAG (Multi-Chassis Link Aggregation) between two Extreme XOS core switches involves several steps. After establishing the MLAG, you can connect edge switches, like

Link Aggregation: What is it, and How Does it Work?

One of the really interesting ways of deploying an aggregated link is to connect a device to a redundant pair of central core or aggregation switches. That is, instead of being a bundle of links

Solved: Link aggregation to 2 core switches

Solved: Hi guys, We''re planning to purchase 2 x WS-C3750G-12S-E core switches and a WS-C2960G-48TC-L access switches. I''d like to know, is it possible to uplink a fiber link from the WS

Port Aggregation FAQs

MC-LAG (Multi-Chassis Link Aggregation Group) allows two switches to work together as a single logical unit, providing both load balancing and redundancy. This setup ensures minimal downtime by

Network redundancy and high availability: STP, link aggregation and ...

Switching Network redundancy and high availability: STP, link aggregation and failover How to design a network that survives a failure — spanning tree, link aggregation, redundant uplinks,

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Understanding Core Switch: What It Is and How to Choose the

It''s advisable to choose a core switch with link aggregation capabilities to ensure efficient transmission of traffic from the aggregation switch to the core switch.

Layer 2 vs Layer 3 Switch: Key Differences and Use Cases

Layer 2 vs Layer 3 switch explained. Learn MAC vs IP forwarding, inter-VLAN routing, performance differences, and when to choose each switch type.

Two-Tier Core

The core switches are configured as a VSX pair to support Layer 2 multi-chassis link aggregation (MC-LAG) to the access layer switches. The previously defined LAG is assigned as the

Port Aggregation FAQs

LACP (Link Aggregation Control Protocol): LACP is an industry-standard protocol (802.3ad) that dynamically manages link aggregation, provides automatic failover, and helps prevent

Redundancy and Link Aggregation in Industrial

Network Redundancy and Link Aggregation are essential features of managed industrial switches eliminates this single point of failure by providing

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Find the best 2.5GbE switch for a homelab: managed MikroTik, QNAP, TP-Link and UniFi picks with 10G SFP+ uplinks, PoE, and fanless options.

Configuring Aggregation on the Core Switch

Configuring Aggregation on the Core Switch Overview To establish a VSX relationship between the core switches, create a link aggregation (LAG) interface for assignment as the VSX data plane''s inter

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