Link Aggregation of 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.

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

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

Link Aggregation Configuration

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This document describes the configuration of Ethernet services, including configuring link aggregation, VLANs, Voice VLAN, VLAN mapping, QinQ, GVRP, MAC table, STP/RSTP/MSTP, SEP, and so on.

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

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.

Link aggregation

Multiple logical connections can be made, but many of the higher level protocols were not designed to fail over completely seamlessly. Combining multiple physical connections into one logical connection

Switch Link Aggregations Configuration | Network as Code

Switch Link Aggregations configuration in Meraki networks provides administrators with comprehensive port bonding and link aggregation capabilities, enabling increased bandwidth, redundancy, and load

What Is an Aggregation Switch and How to Choose?

An aggregation switch is a network device that consolidates traffic from multiple access switches, wireless access points, or other edge devices and forwards it to core switches or routers.

An Overview of High Availability in UniFi – Ubiquiti Help Center

The Enterprise Campus Aggregation is a high-capacity 100G switch that extends redundancy to the core of your network. It features Multi-Chassis Link Aggregation (MC-LAG), which allows combining two

TP-Link S7500-24Y4C 24-Port L3 Managed Stackable 25G SFP28 Aggregation ...

The TP-Link S7500-24Y4C 24-Port L3 Managed Stackable 25G SFP28 Aggregation/Core Switch is a high-performance L3 managed switch tailored for the aggregation and core layer, featuring L3

Configuring MC-LAG in UniFi Network – Ubiquiti Help Center

Configuring MC-LAG in UniFi Network Multi-Chassis Link Aggregation Group (MC-LAG) enables redundancy and load balancing by connecting two ECS-Aggregation switches as an MC-LAG pair.

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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,

[Enterprise Switch] The behavior of MLAG and how to configure

Purpose A multi-chassis link aggregation group (MLAG) is a pair of links that terminate on two cooperating switches and appear as an ordinary link aggregation group (LAG). The cooperating

Demo Kit

Explore SAPUI5 SDK Demo Kit for comprehensive tools, documentation, and interactive demos to develop responsive web applications with SAP''s UI framework.

Network Switches

Fixed core and aggregation switches for AI-ready networks with integrated security and up to 400G uplinks.

H3C S7500X Enterprise Core Switch Series

Distribution - Multi-chassis link aggregation to enable load sharing and backup over multiple uplinks, improving redundancy and link utilization. Easy Management - A single IP address to manage the

EOS 4.36.1F

Arista switches support Multi-Chassis Link Aggregation (MLAG) to logically aggregate ports across two switches. For example, two 10-gigabit Ethernet ports, one each from two MLAG configured switches,

S3410-24TS-P, 24-Port Gigabit Ethernet L2+ PoE+ Switch, 24 x PoE

Multi-Chassis Link Aggregation (MLAG): Enables device-level redundancy by allowing the switch to form logical links across two separate physical switches for high availability.

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

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