Switch Port Aggregation and Link Aggregation



Overview

Port aggregation is useful for implementing load balancing and provides a redundant link backup. To allow port aggregation, the basic configuration on all the ports must be consistent.

Key Takeaways

Switch port aggregation combines multiple physical ports into a single logical link to increase bandwidth, provide redundancy, and improve network reliability. What is Port Aggregation? Port aggregation, also called link aggregation, port trunking, or Ethernet bonding, allows multiple physical Ethernet ports to act as a single logical connection between network devices, such as switches, servers, or NAS devices.

This setup increases total throughput and provides failover if one link fails, ensuring continuous connectivity.

Benefits of Port Aggregation

Increased Bandwidth: Traffic is distributed across multiple ports, effectively multiplying the available bandwidth. Redundancy: If one physical link fails, traffic is automatically rerouted to the remaining links. Load Balancing: Network traffic can be balanced across aggregated links to optimize performance.

Improved Reliability: Aggregation reduces the risk of a single point of failure between devices. Protocols and ConfigurationLACP (Link Aggregation Control Protocol, IEEE 802. 3ad): A dynamic protocol that automatically negotiates aggregation settings between devices, provides failover, and prevents misconfigurations.

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Static Aggregation (ON mode): Manually configured aggregation without LACP. Both ends must match settings, and failover is not automatic.

Modes of LACP

Active: Initiates LACP negotiation with the other device. Passive: Responds to LACP negotiation but does not initiate it.

Best Practices

Sequential Ports: Some switches require aggregated ports to be sequential in numbering. Consistent Configuration: Ensure all ports in the aggregation group have the same speed, duplex, VLAN settings, and STP configuration. Cable Diversity: When connecting switches in different locations, run cables over separate physical paths to reduce the risk of simultaneous link failure.

Downstream First: Configure aggregation on the most downstream switch before moving upstream. Use CasesSwitch-to-Switch Aggregation: Increases bandwidth and redundancy between switches, useful for high-traffic networks.

Switch-to-

Client Aggregation: Provides higher throughput for servers or high-performance devices that require more bandwidth than a single port can deliver. LimitationsMulti-chassis LAG (MC-LAG) is not supported on all switches; it allows two switches to act as a single logical unit for advanced redundancy.

Static LA

Gs do not provide automatic failover and are prone to misconfiguration. Aggregation is only effective when multiple clients or high traffic loads are present. By following these guidelines, port aggregation can significantly enhance network performance, reliability, and scalability.

Article Content

Link Aggregation: Static vs Dynamic, LACP, and MLAG Configuration

This article provides a comprehensive explanation of link aggregation — covering LACP, static vs dynamic link aggregation, and MLAG (Link Aggregation Plus) — along with real

Port Aggregation Configurations

Port aggregation is useful for implementing load balancing and provides a redundant link backup. To allow port aggregation, the basic configuration on all the ports must be consistent. The following list

Port Aggregation FAQs

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In what order should I configure port aggregation on my switches? You should be certain that configuration changes are first done on the most downstream switch, and then move upstream

Link aggregation

OSI layer 2 (data link layer, e.g. Ethernet frame in LANs or multi-link PPP in WANs, Ethernet MAC address) aggregation typically occurs across switch ports, which can be either physical ports or

Link Aggregation and Load Balancing

This is often referred to as link aggregation, link bonding or EtherChannel. To configure two or more ports, up to eight, as a port aggregate, navigate to Switching > Monitor > Switch ports

Link Aggregation, LAG, LACP and MLAG in 2026:

Network-Switch can help you pick the right switches, design the right topology, and validate your link aggregation strategy so it works the way

What are link aggregation and LACP and how can I use

Some network devices support Link Aggregation Control Protocol (LACP), which helps to prevent errors in the link aggregation setup process.

Aggregated Ethernet Interfaces Overview | Junos OS | Juniper Networks

You can configure LAGs to connect a QFX Series product or an EX4600 switch to other switches, like aggregation switches, servers, or routers. This example describes how to configure LAGs to connect

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

A fundamental for effective switch management, if you have a switch with a whole lot of Gigabit Ethernet ports, you can connect all of them to another device that also has a bunch of ports

An Overview of High Availability in UniFi – Ubiquiti Help Center

This enables link aggregation of ports across both switches to effectively load balance traffic, and more importantly provide nearly instant failover in the event of a link failure, port failure, or even an entire

Configure Virtual Switch with an EtherChannel (or port channel)

For more information about EtherChannel (port channel) configurations and other link aggregation concepts please reference the articles below: EtherChannel: This is a link aggregation

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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.

UniFi Switching

Intuitive Port & VLAN Management Global Switch Configuration Centralized Remote Management MC-LAG Multi-Chassis Link Aggregation (MC-LAG) pairs two

EOS 4.36.1F

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

What is “link aggregation” and how does it benefit your network?

It is part of their “Web Smart” series that makes setting up link aggregation a snap as each of the ports will self configure once connected as seen in the screenshot below using ports 1,2 and 3.

Dell Networking OS9 How to Create a Port Channel

Instructions This article discusses the process to create a new port channel or Link Aggregation Group (LAG), and allowing multiple VLANs on Dell Networking switches running OS9. This example uses

Dual-WAN vs. Link Aggregation, Explained

Learn all about the differences (and similarities) between Dual-WAN and Link Aggregation, and the steps to set them up in your supported hardware.

BrosTrend 2.5-Gigabit Netzwerk Switch 8 Port, 2.5 Gbit LAN

PLUG AND PLAY The Ethernet switch provides a hassle-free plug-and-play experience. Easily switch between standard mode, static link aggregation and VLAN mode by simply switching the hardware

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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