Aggregation Layer 2 Switch

Article Overview

Layer 2 link aggregation combines multiple physical ports into a single logical interface to increase bandwidth and provide redundancy.

Overview of Layer 2 Aggregation

Link aggregation, also called port trunking or LAG (Link Aggregate Group), allows multiple physical Ethernet ports to act as a single logical link. This provides higher aggregate bandwidth, redundancy, and efficient traffic distribution across member ports. If one physical link fails, traffic is automatically rerouted to the remaining links, maintaining connectivity and improving reliability . Aggregation can be static (manually configured) or dynamic using LACP (Link Aggregation Control Protocol), which negotiates link membership automatically .

Steps to Configure Layer 2 Aggregation
o Access Global Configuration Mode Enter the switch's global configuration context:
switch(config)# This is required before creating a LAG interface .
o Create a Logical Aggregate Interface Assign a LAG ID (typically 1-256) and create the Layer 2 aggregate interface:
interface port-channel switchport mode trunk The system automatically creates a corresponding aggregation group with the same number .
o Bind Physical Ports to the LAG Select the physical ports to include in the aggregation group:
interface
channel-group mode active (for LACP)channel-group mode on (for static) Only the selected ports will be members of the logical interface .
o Configure VLANs and Trunking Ensure the aggregate interface is in the correct VLAN mode (access or trunk) and assign VLANs as needed:
switchport trunk allowed vlan switchport trunk native vlan
o Verify Configuration Check the status of the LAG and member ports:
show etherchannel summaryshow interfaces port-channel Confirm that all member ports are active and traffic is being distributed across them .

Best Practices

o Use LACP for dynamic negotiation to simplify management and prevent misconfiguration.
o Distribute cables over different physical paths to reduce the risk of simultaneous link failure .
o Ensure all member ports have identical speed and duplex settings to avoid traffic imbalance.
o Monitor traffic distribution to verify that load balancing is effective. By following these steps, a Layer 2 switch can efficiently aggregate multiple ports, providing both increased bandwidth and resilient connectivity

between switches or to servers .

This versatile modular switch is designed for high-density, end-of-row, and high-performance aggregation-layer deployments in both

Link Aggregation ist eine Netzwerktechnik, bei der mehrere physische Ethernet-Verbindungen zwischen zwei

Aggregation-layer submodule The aggregation-layer submodule plays a pivotal role in providing a highly reliable, scalable "middle

1 Link Aggregation Configuration Guide This document describes the Link Aggregation feature supported in

In-depth discussion of the key role and selection points of aggregation switches in network architecture, and

The multi-tier model relies on a multi-layer network architecture consisting of core, aggregation, and access layers, as

Cisco Meraki MS switches use the open standard LACP to provide Layer 2 link aggregation in the form of link bonding

Layer 2 and Layer 3 switches play distinct roles in network aggregation setups, and

Bündelung auf Layer 2: LAG arbeitet auf der Sicherungsschicht (OSI-Layer 2) und kombiniert mehrere physische

Link aggregation, also called trunking, is an optional feature available on the Ethernet switch and is used with Layer 2 Bridging. Link

Introduction Datacenter design is based on a proven layered approach. The layered approach is the basic foundation

The aggregation switch is located in the middle of the network architecture, which is

S300, S500, S2700, S3700, S5700, S6700, S7700, and S9700 Series Switches Typical Configuration Examples (V200) This

Key Features of 3 layers design of Data Center: Data center network is divided into 3 standard three-layer structure.

Aggregation Layer 2 Switch

Link aggregation is a way of bundling a bunch of individual (Ethernet) links together so they

An aggregation switch refers to a type of switch used to connect multiple ToR switches to a core switch/router in a cloud data center

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