

Aggregation Layer Switch Settings



Overview

What Is an Aggregation Switch and How to Choose?

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

Key Takeaways

Aggregation layer switches are configured by creating link aggregation groups, assigning member ports, and ensuring consistent VLAN, speed, and duplex settings, with optional LACP for dynamic aggregation.

Step 1: Plan Aggregation and Redundancy

- Identify physical links between aggregation switches and upstream devices.
- Decide on static (manual) or dynamic (LACP) aggregation. Static aggregation is stable and does not require negotiation, while dynamic aggregation uses LACP to automatically maintain port states ().
- Ensure redundancy by using multiple aggregation switches and configuring EAPS or similar protocols to prevent single points of failure ().

Step 2: Configure Member Ports

- Select ports to be aggregated. All member ports must have consistent attributes:
- Speed and duplex mode (full duplex required)
- VLAN membership and PVID
- Link type: trunk, hybrid, or access ()

- On Layer 2 aggregation, only Layer 2 Ethernet interfaces can be used; for Layer 3 aggregation, only Layer 3 interfaces are allowed ().

Step 3: Create Aggregation Group

- Static aggregation: Add selected ports to a static group (ON mode). No LACP negotiation is needed ().
- Dynamic aggregation: Add ports in active or passive mode to a dynamic group. LACP must be enabled to communicate with the peer device ().
- Ensure the number of member ports, interface rate, and duplex mode match on both ends of the link ().

Step 4: Configure VLANs and Subinterfaces

- Assign permitted VLANs and configure PVID for each member port.
- For Layer 3 aggregation, create subinterfaces for VLAN-specific routing. Each subinterface handles traffic for its VLAN ID ().

Step 5: Enable Redundancy Protocols

- Configure EAPS domains and control VLANs on aggregation switches to provide fault isolation and minimize broadcast loops ().
- Enable EAPS protocol and verify shared and protected VLANs.

Step 6: Verify Configuration

- Check aggregation states of member ports: Selected (active), Unselected (inactive), or Individual (normal port) ().
- Confirm link status, bandwidth aggregation, and failover behavior.
- Test load balancing and redundancy by simulating link failures.

Step 7: Monitor and Maintain

- Regularly monitor port statistics, LACP status, and EAPS health.
- Ensure any changes to port attributes are synchronized across all member ports in the aggregation group (). By following these steps, aggregation layer switches can provide high bandwidth, redundancy, and efficient load balancing across the network.

Article Content

Configuring Link Aggregation Group and Link Aggregation

LACP enables you to form a single Layer 2 link automatically from two or more Ethernet links. This protocol ensures that both ends

Interfaces User Guide for Switches

Overview IEEE 802.3ad link aggregation enables you to group Ethernet interfaces to form a single link layer interface, also known as

Link Aggregation and Ethernet Bonding Feature Overview and ...

Link aggregation interfaces have names like "po1" and "sa1" depending on the aggregation method in use. Ethernet bonding is used to

Configure an Aggregate Interface Group

An aggregate interface group uses IEEE 802.1AX link aggregation to combine multiple Ethernet interfaces into a single virtual

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