Center-end aggregation switch



Overview

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Key Takeaways

A center-end aggregation switch aggregates traffic from multiple access switches or server racks, providing high-density, high-performance connectivity to core or spine switches in enterprise and data center networks.

Role and Function

A center-end aggregation switch serves as an intermediate layer between access switches (or server racks) and the core network. Its primary function is to collect and consolidate traffic from multiple access points, reducing the number of direct connections to the core and simplifying network management. These switches typically support Layer 2 and Layer 3 features, link aggregation, Quality of Service (QoS), and high port density to handle large volumes of traffic efficiently.

Deployment in Data Centers

In data center environments, aggregation switches are often deployed in End-of-Row (EoR) architecture, where each row of server racks connects to a high-density aggregation switch at the row's end. This setup centralizes management, reduces cabling complexity, and allows uplinks to core or spine switches using high-speed optical interfaces such as 40G, 100G, or 400G.

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Compared to Top-of-

Rack (ToR) switches, EoR aggregation reduces the total number of switches and simplifies maintenance while maintaining high throughput.

Key Features

High port density: Supports multiple 25G, 40G, 100G, or even 400G connections for uplinks and server aggregation. Redundancy and high availability: Features like MC-LAG, VRRP, and OSPF ensure failover and continuous network operation. Layer 2/3 support: Enables VLAN segmentation, routing, and advanced network policies.

Simplified management: Centralized configuration and monitoring reduce operational complexity. Power over Ethernet (PoE): Some aggregation switches provide PoE for connected devices, useful in campus or branch deployments.

Examples of Modern Aggregation Switches

Cisco Meraki MS450-12: Connects multiple access layer devices with versatile Layer 3 features.

Ubiquiti EC

S Aggregation Switch: 1. 8 Tbps high-density 100G/25G switch with MC-LAG support for high availability.

HPE Aruba C

X Series: Layer 3 stackable switches with Multi-Gigabit Ethernet, high-power PoE, and up to 100G connectivity for campus and data center aggregation. SummaryCenter-end aggregation switches are critical for scalable, high-performance network design, bridging access switches or server racks to the core network. They provide centralized traffic aggregation, redundancy, and advanced Layer 2/3 features, making them essential in modern enterprise and data center architectures.

Proper deployment, such as EoR placement, ensures efficient cabling, simplified management, and high availability.

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Article Content

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

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