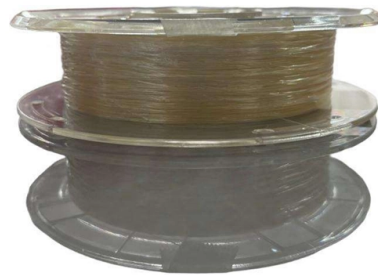


Aggregation switches can act as core switches



Overview

Core, Aggregation, or Access Switches?

Choose the Discover the crucial differences between core, aggregation, and access switches. Find out Core vs Aggrega.

Key Takeaways

Aggregation switches can sometimes function as core switches in smaller or less demanding networks, but they generally lack the high capacity, redundancy, and low-latency features of dedicated core switches. Role of Aggregation Switches

Aggregation switches consolidate traffic from multiple access switches, wireless access points, servers, or storage devices and forward it toward the core network or data center. They typically operate at Layer 2 or Layer 3, support VLANs, link aggregation (LACP), and QoS, and are designed to handle high traffic volumes efficiently. Their main purpose is to aggregate and manage traffic from the access layer before it reaches the core layer.

Role of Core Switches



Core switches serve as the backbone of a network, connecting multiple aggregation switches and providing high-speed, low-latency, and highly reliable connectivity to other networks or the internet. They are designed for high throughput, advanced routing, fault tolerance, and high availability, often with redundant power supplies and uplinks . Core switches are critical in large-scale networks where performance and reliability are paramount.

When Aggregation Switches Can Act as Core Switches

In small or medium-sized networks, where traffic volumes are moderate and redundancy requirements are lower, a high-performance aggregation switch can sometimes serve as a core switch. This is feasible if the switch has sufficient port density, Layer 3 capabilities, and throughput to handle all aggregated traffic without creating bottlenecks . Some modern aggregation switches are designed with features that allow them to bridge the gap between aggregation and core layers, including advanced management, VLAN segmentation, and link aggregation .

Limitations

Even high-end aggregation switches may not match dedicated core switches in terms of:

- Maximum throughput and low latency for large-scale networks
- Redundancy and failover capabilities
- Advanced Layer 3 routing and network segmentation
- Scalability for future growth in enterprise or data center environments

Conclusion

While aggregation switches can act as core switches in smaller or less demanding networks, for large-scale, high-traffic, or mission-critical environments, it is recommended to use dedicated core switches to ensure optimal performance, reliability, and scalability. Network architects often combine access, aggregation, and core layers to achieve the best balance of cost, performance, and manageability .

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