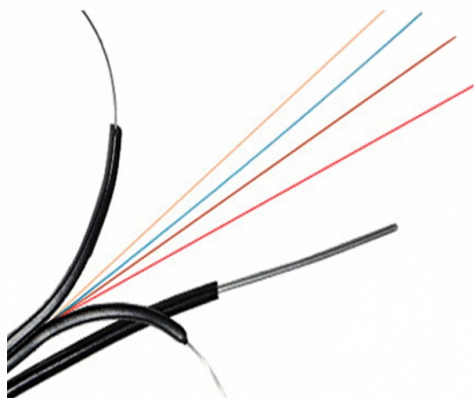


Does the core switch have a gateway



Overview

Unlike access or distribution switches, a core switch is optimized for Layer 3 performance, modular scalability, and redundancy.

Key Takeaways

A core switch can function as the gateway for VLANs or subnets, handling routing and IP address assignment for connected devices. Role of a Core Switch as a Gateway

A core switch, especially a Layer 3 switch, can serve as the default gateway for multiple VLANs or subnets in a network. It provides routing and forwarding for traffic between subnets and to external networks, effectively acting as the exit point for devices in each VLAN . In campus or enterprise networks, the core switch often connects to aggregation and access switches, centralizing traffic management and improving reliability .

Gateway IP Configuration

For each VLAN or subnet, the core switch typically hosts a Switched Virtual Interface (SVI) with an IP address that serves as the gateway. For example, if a Layer 2 access switch has devices in the 172.20.10.0/24 subnet, the core switch would have an SVI like 172.20.10.1, which becomes the default gateway for all devices in that subnet . Access switches themselves do not usually act as gateways; they forward traffic to the core switch for inter-VLAN routing.

DHCP and IP Assignment



Core switches can also function as DHCP servers, assigning IP addresses to devices in their respective VLANs. In some architectures, access controllers (ACs) or aggregation switches may handle DHCP for APs or specific segments, but the core switch remains the central routing point. This ensures consistent IP management and simplifies network troubleshooting.

Best Practices

- **Layer 3 Core Switch:** Use a Layer 3 switch at the core to handle routing efficiently.
- **Separate Management and Service VLANs:** Avoid using VLAN 1 for management or service traffic to prevent conflicts.
- **SVI per VLAN:** Assign a unique SVI on the core switch for each VLAN/subnet to act as the gateway.
- **Edge Routing:** For WAN or internet access, the core switch may point to an external router as its next-hop gateway.
- **Scalability:** In large networks, placing gateways at the core simplifies expansion and centralizes traffic control. In summary, the core switch can and often should act as the gateway for connected VLANs and subnets, providing Layer 3 routing, DHCP services, and centralized network management while subordinate switches handle local device connectivity. Proper SVI configuration and VLAN separation are key to maintaining network stability and performance.

Article Content

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Solved: core switch and sub switch gateway

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Core Switch vs. Edge Switch: What's the Difference?

A core switch and an edge switch can operate at different layers of the OSI model. Edge switches often work at the

Introduction to Core Switch Configuration

HSRP and VRRP protocols are used to guarantee the load sharing and hot backup of core equipment. In case of problems in a

Access vs. Distribution vs. Core Switch Comparison Guide

The most common model is the three-tier hierarchy: Access Layer, Distribution Layer, and Core Layer. Each layer is served by

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Discover what a Core Switch is, its pivotal role in network architecture, and how it boosts performance and reliability in

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On Fortigate or core switches. In my research I'm getting mixed suggestions - Some say that core switches are for routing, when

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Conclusion The roles of switches and gateways in networking are different. In a single network, the switch will be

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Solved: Choosing a Core Switch

What are the criterias when choosing a core switch? For example, in the Cisco product pages - the Catalyst 4500 and

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