

Core switches are not distributed



Article Overview

When core switches are not distributed, the network risks congestion, bottlenecks, and reduced fault tolerance due to the lack of an intermediate distribution layer.

Understanding the Issue

In a standard three-tier network architecture, core switches form the high-speed backbone, connecting multiple distribution switches, which in turn aggregate traffic from access switches that connect end devices . If core switches are not distributed—meaning there is no proper distribution layer or the core directly connects to access switches—the network effectively becomes a flat or collapsed design, which can lead to several problems:

- Traffic congestion: Core switches handle all routing and switching without intermediate aggregation, increasing the likelihood of packet collisions and back-flow from access devices .
- Reduced scalability: Adding new access switches or VLANs becomes difficult because the core switch must manage all connections directly, limiting port density and expansion .
- Fault tolerance issues: Without distribution switches, a failure in the core switch can disrupt the entire network, as there is no intermediate layer to isolate failures .
- Inefficient policy enforcement: Distribution switches typically handle inter-VLAN routing, QoS, and security policies. Skipping this layer forces the core to manage these tasks, potentially overloading it .

Implications for Network Performance...

Article Content

Core vs Distribution vs Access Switch: Architecture Guide

Failing to properly categorize and deploy switches according to their designated tier leads to broadcast storms, routing

Is there any significant difference between a core switch, a ...

Is there any significant difference between a core switch, a distribution switch, and an access switch except for their speeds and

Core Switch

Core switches are defined as high-capacity switches located at the top of a cloud data center network, connecting aggregation

Distribution & Core layer switch configuration

Hi, I have 6500, 4500 & 3500 switches. I want to configure 6500 as core, 4500 as distribution & 3500 as access layer

Difference between a core switch and "normal" switch?

What's the difference between a Core Switch and a normal switch? I have 4 switches in a stack that everything connects to. This is

Quick question about Core/Distribution/Access switches

Quick question about Core/Distribution/Access switches CCNA here, but don't work enough with networking to know the answer to

What Is a Core Switch?

Conclusion: Is It Time for a Core Switch? If your organization requires high-speed, always-on network connectivity, a core switch is

Access vs. Distribution vs. Core Switch Comparison Guide

Compare Access, Distribution, and Core switches: understand their roles, features, and differences in enterprise network hierarchy.

Core Switch vs. Distribution Switch vs. Access Switch

A core switch is the primary switch installed at the backbone of a layered or hierarchical network. These data switches are

Core Switches vs. Distribution Switches

Core switches are designed for high-speed data routing in the core of the network, while distribution switches are responsible for

Campus LAN Core and Distribution Switches

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