

How to use a core Layer 3 switch



AI Overview

A core Layer 3 switch acts as the high-speed backbone of your network, handling inter-VLAN routing, aggregating traffic from distribution switches, and connecting to upstream firewalls or routers. Understanding the Core Layer 3 Switch Role A core switch sits at the backbone of an enterprise network, providing ultra-low latency and high throughput for large volumes of traffic from distribution switches. Unlike access or distribution switches, it primarily focuses on routing and forwarding data between VLANs and subnets, rather than connecting end devices directly. Core switches often include redundancy features like dual power supplies and support for protocols such as VRRP or HSRP to maintain high availability.

Basic Configuration Steps

- Enable Layer 3 Routing** Ensure routing is enabled on the core switch. This allows the switch to route traffic between VLANs and subnets internally, reducing the load on firewalls.
- Create VLAN Interfaces (SVIs)** For each subnet or VLAN, create a Switched Virtual Interface (SVI) on the core switch. Assign an IP address for each VLAN to act as the default gateway for devices in that subnet.
- Connect to Distribution Switches** Use routed ports or /30 point-to-point subnets for uplinks between the core and distribution switches. Both ends of the link should be in the same subnet, and you can advertise VLANs using static routes or a dynamic routing protocol like OSPF.
- Integrate with Firewalls** The core switch should have a default route pointing to the firewall for WAN traffic. On the firewall, configure static routes for each internal subnet pointing to the core switch to ensure proper traffic flow.
- Configure Trunk Ports** Ports connecting to distribution switches should be configured as trunks to carry multiple VLANs. Ensure VLAN tagging is consistent across all switches to prevent mismatches.
- Optional DHCP Considerations** If the DHCP server is not on the same subnet as a VLAN, configure IP helper addresses on the core switch to forward DHCP requests to the server.

Best Practices Redundancy: Use dual core switches with VRRP...

Article Content

Access, Distribution, and Core Layers Explained

This tutorial provides an overview of the access, distribution, and core layers and explains two-tier and three-tier campus LAN designs.

Layer 3 Switches Explained: Architecture, Routing Logic, Use Cases,

When traffic crosses from one IP subnet to another for the first time, the Layer 3 switch performs routing calculation like a router. It checks the destination IP address, consults the routing

Network Switches

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What Is a Core Switch? Network Backbone Architecture Guide

What makes a core switch a "Layer 3" switch? Core switches are considered Layer 3 switches because they utilize Application Specific Integrated Circuits (ASICs) to perform hardware

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Layer 3 Switches in Cisco

A layer 3 Switch is a special type of networking device which is able to perform/execute functions of 2 layers of the OSI Model i.e., the Data Link Layer (Layer 2) and the Network Layer

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Layer 3 Routing - Ubiquiti Help Center

Layer 3 Routing allows a UniFi Switch to route traffic between VLANs and to other destinations using static routes. It is possible use L3 Routing with a UniFi Gateway or third-party gateway.

The Telegraph

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What Is a Core Switch?

Explore what a core switch does, why it's essential for enterprise networks, and how to choose the right model. Includes real-world applications and Cisco/Huawei/Aruba model comparison.

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Meraki Switches

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Types of Network Protocols

Network protocols work by dividing communication tasks into layers, where each layer performs a specific function to ensure successful data transmission. Communication is based on the

Layer-Three Switching and Forwarding

This page contains information about Layer-Three Switching and Forwarding technology.

Atlantic International University

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