

Enterprise Core Switch Layer 3



AI Overview

Enterprise-level Layer 3 core switches provide high-speed, high-capacity routing and switching at the backbone of large networks, supporting advanced protocols, scalability, and low-latency performance. Core Switch Overview A core switch is positioned at the top of an enterprise network hierarchy, aggregating traffic from distribution switches and providing ultra-low latency and maximum throughput across the network. Unlike edge switches, core switches handle massive data volumes and are designed for fault tolerance, ensuring uninterrupted connectivity for critical applications. They operate at Layer 3, bridging traditional MAC-based switching with IP-based routing, often using ASICs for high-speed packet processing.

Key Features of Enterprise Layer 3 Core Switches

- High Port Density and Speed:** Modern core switches offer dense 10/25/40/100/400GbE ports to accommodate large-scale networks. Examples include the HPE Aruba CX 8360 v2 Series with up to 4.8 Tbps switching capacity and Arista 7280R3 Series with 9.6 Tbps.
- Advanced Routing Protocols:** Full support for BGP, OSPF, IS-IS, and VRF enables complex routing and segmentation across enterprise campuses and data centers.
- Scalability and Redundancy:** Features like stacking, VSX, and redundant power/fan systems ensure high availability and seamless network expansion.
- Low Latency and High Throughput:** Core switches are optimized for sub-microsecond latency and multi-terabit throughput, critical for data center and campus backbone performance.
- Fabric and Overlay Support:** Advanced technologies like EVPN-VXLAN allow scalable, modern fabric overlays for multi-tenant or segmented networks.
- Automation and Management:** Cloud-managed platforms and APIs (e.g., Aruba Central, Juniper Mist AI, Arista CloudVision) provide real-time analytics, AI-driven insights, and simplified configuration.
- Security:** Hardware and software integrity protection, ACLs, and segmentation capabilities safeguard enterprise traffic.

Recommended Enterprise Co...

Article Content

Fixed Port L3 Managed Ethernet Switches

HPE Networking CW 2150 Switch Series empowers your business with reliable, high-performance networking tailored for small and medium-sized businesses

L3 SWITCHES

The L3 switch is ideal for service provider edge aggregation, enterprise wiring closets, data center aggregation, and network core deployment. These switches

Gartner Business Insights, Strategies & Trends For

Gain strategic business insights on cross-functional topics, and learn how to apply them to your function and role to drive stronger performance and innovation.

Multi-Zone Enterprise Network Architecture with Layer 3 Switching

Multi-Zone Enterprise Network Architecture with Layer 3 Switching A Cisco Packet Tracer project that demonstrates the design and implementation of a scalable, secure, and redundant enterprise

Everything NVIDIA Announced at GTC 2026, Explained

Everything NVIDIA Just Announced at GTC 2026: Seven Chips, Five Racks, One Giant Bet on Agentic AI

Cisco Catalyst 9500 Series Switches Data Sheet

The Cisco® Catalyst® 9500 Series switches are the next generation of enterprise-class core and aggregation layer switches, supporting full

L3 Enterprise Switches from Edgecore

The Edgecore ECS4620 Series are high-performance Gigabit Ethernet Layer 3 switches, ideal for server aggregations and backbone upgrades. They offer enhanced security, advanced QoS, and easy

3-Layer Enterprise Switching Architecture: Core vs Access

Explore enterprise switching architecture and see how core, aggregation, and access layers integrate with PoE, oversubscription, and design

Cisco Switch Selector

The series provides enterprise-class Layer 2 and 3 switching. They are designed for 3-click WebUI or Cisco DNA Center and SD-Access management and

Cisco vs Aruba Switches: Enterprise Comparison Guide

Compare Cisco vs Aruba switches for enterprise networks. Read our expert guide on Catalyst vs CX, DNA licensing, Central, and ISE vs ClearPass.

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48-Port 10G L3 Campus Aggregation Switch

Marvell Prestera-based layer 3 switch has 48x10Gb ports and 6x100Gb SFP+ ports uplinks. Enterprise SONiC OS is ready to support rich L2/3 functions.

What Is a Core Switch? Network Backbone Architecture

To achieve backbone speeds, a core switch must operate at Layer 3 of the OSI model, bridging the gap between traditional MAC-based switching and

Three-Tier Network Architecture Lab: Building Enterprise-Grade

What Is the Three-Tier Network Model? The three-tier (or three-layer) hierarchical model is a Cisco-advocated network design that divides an enterprise LAN into three distinct layers: the

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Multi-Zone Enterprise Network Architecture with Layer 3 Switching A Cisco Packet Tracer project that demonstrates the design and implementation of a scalable, secure, and redundant enterprise

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32-Port 100Gb Core Network Switch Enterprise SONiC

The CX532P-M-H is a 1U enterprise core switch that delivers 32× 100G QSFP28 ports plus 2× 10G SFP+ for 3.2 Tbps of switching capacity, with a forwarding rate of 2.8 Bpps and 24MB of packet

How to Choose Layer-3 /Core Switches for Enterprise Networks□

With this architecture, we can use single-chip box switches to build a more efficient and streamlined next-generation enterprise network. Under the Leaf/Spine network architecture, each

TP-Link S6500-48M6Y Managed Switch | 48-Port 10G Multi-Gigabit

This L3 managed switch provides high-density 10G multi-gigabit connectivity and 25G SFP28 uplinks for demanding enterprise environments. It features advanced routing capabilities and redundant power

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H3C S7500X Enterprise Core Switch Series

H3C S7500X switch series comes with IPv4/IPv6 dual-stack platform that provides sophisticated IPv4/IPv6 solutions by supporting multiple tunnels, IPv4/IPv6 Layer 3 routing protocols, multicasting,

Microsoft launches Wave 3 of Microsoft 365 Copilot with

Representative image illustrating Microsoft Corporation's launch of Wave 3 of Microsoft 365 Copilot, highlighting agentic AI capabilities, the new

Enterprise Networking

Edgecore Enterprise Switching solutions deliver high-performance, secure, and scalable connectivity for campus and branch networks. Built on open standards, they support advanced features, simplified

Contact Us

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