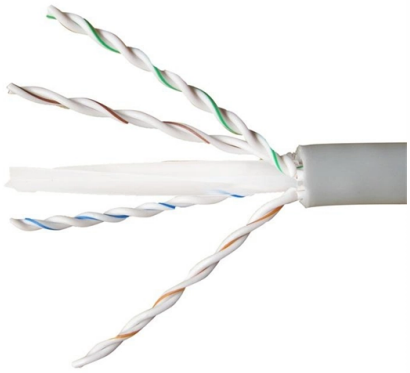
Core switch switching capacity 15Tbps



Overview

Cisco Catalyst 9600 Series Switches Data SheetBuilt upon the foundation of the Catalyst 9000, the Catalyst 9600 Series offers scale and security when alway.

Key Takeaways

For a core switch targeting 15 Tbps switching capacity, high-end modular switches like the Cisco Catalyst 9600 Series are suitable, offering up to 25. 6 Tbps full-duplex. Cisco Catalyst 9500 SeriesThe Cisco Catalyst 9500X switches are enterprise-grade fixed core switches with a maximum switching capacity of 12.

8 Tbps full-duplex, slightly below the 15 Tbps target. Key features include: Forwarding performance: 8 billion packets per second (Bpps)Port density: Up to 28 QSFP28 (40/100G) and 60 SFP56 (10/25/50G) nonblocking portsBuffering: 80 MB low-latency buffer plus up to 8 GB High-Bandwidth Memory (HBM) for deep packet bufferingRouting and switching: Full Layer 2/3 support, MPLS, VPNs, NAT, and advanced QoSCPU and memory: Multi-core x86 CPU with 32 GB DDR4 and up to 960 GB SSD for container-based applicationsSecurity: Line-rate 256-bit MACsec and WAN-MACsec encryptionVirtualization: Cisco StackWise Virtual for system scaling and high availabilityWhile highly capable, the 9500X does not meet the 15 Tbps threshold, making it more suitable for high-performance enterprise cores rather than ultra-high-capacity data center cores.

Cisco Catalyst 9600 SeriesFor switching capacities above 15 Tbps, the Cisco Catalyst 9606R chassis is a better fit: Switching capacity: Up to 25. 6 Tbps full-duplex, exceeding the 15 Tbps requirementPer-slot bandwidth: Up to 6. 4 Tbps (3.

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2 Tbps full-duplex)Modular design: Supports flexible port configurations and high-density 40/100/200/400G QSFP-DD portsHigh availability: Redundant power supplies, fan trays with dynamic compensation, and NEBS-compliant coolingEnterprise features: Full Layer 2/3 routing, MPLS, VPNs, QoS, and network virtualization supportThe 9600 Series is designed for enterprise campus cores and high-end aggregation, providing scalability, high throughput, and operational flexibility for networks requiring 15 Tbps or more. Considerations for 15 Tbps Core DeploymentPort requirements: Ensure the switch supports the required number of high-speed ports (100G/200G/400G) to aggregate traffic efficiently.

Forwarding rate: Verify that the Bpps performance matches the expected packet load, not just raw Tbps. Redundancy and high availability: Modular chassis with redundant power and cooling is critical for core deployments. Future scalability: Modular switches like the 9600 Series allow incremental upgrades to meet growing traffic demands.

Security and programmability: Hardware-based encryption, SD-Access, and programmable pipelines (P4) enhance network flexibility and protection. In summary, for a 15 Tbps core switch requirement, modular platforms like the Cisco Catalyst 9600 Series are recommended, while fixed-core switches like the 9500X are slightly below the threshold but still suitable for high-performance enterprise cores.

Article Content

Cisco Catalyst 9600 Series Switches Data Sheet

Built upon the foundation of the Catalyst 9000, the Catalyst 9600 Series offers scale and security when always-on is a must. Twice as fast, twice the capacity: Meet your new campus core.

Huawei CloudEngine S16700 Series Flagship Core Switches Datasheet

modular core switches designed for high-end campus networks. They are designed to. secure and trustworthy campus networks. end campus networks in the fully-wireless era. S16700 series switches

7 Best Enterprise Core Switches for 2026 That Power Your Network

Stay ahead in network infrastructure with the top enterprise core switches for 2026 that promise unmatched performance and future-proofing.

Catalyst 9000 Switching Family Core and Distribution

“Uplink ratios up to 20:1 between the Access and Distribution layer switches, and 4:1 between the Distribution layer and Core switches are typical in enterprise network designs

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Catalyst 9000 Switching Family Core and Distribution

Cisco Unified Access Data-Plane (UADP®) Common ASIC Architecture for Switching Access, Distribution & Core

FortiSwitch Data Center Series Data Sheet

Offering high performance with low latency, FortiGate NGFW and FortiSwitch campus core and data center switching can support the demands of high-speed traffic inspection and segmentation.

H3C S10500X-G Series Next Generation Core Switch

Powered by the H3C COMWARE 7 network operating system, the S10500X-G offers a comprehensive set of features tailored to both campus and data center environments, providing a secure and flexible

CloudEngine S12700E Series Switches

CloudEngine S12700E utilizes high performance chipset to deliver industry-leading single-slot bandwidth and 100 GE port density. Discover non-blocking switching and zero packet loss with advanced cell

Capacity Planning

Topics covered include small, medium, and large campus reference architectures, EVPN-VXLAN requirements, and capacity planning guidance.

Huawei S9306 Switch Guide: Specs, EOS Date & Modern Replacements

RG-S6910-3C Data Center 100G High Density Modular Core Switch 4U 3 Slots 19.2Tbps Switching Capacity Backward Compatible $2,855 5.0(385) MOQ: 1 set 14% reorder rate ≤2h response time

Cisco Catalyst 9606R Modular Switch | 25.6 Tbps Campus Core Switching

The Cisco Catalyst 9606R is a high-performance, modular core switching platform engineered for large enterprise networks, service providers, and mission-critical data center deployments. With 25.6 Tbps

HPE Aruba Networking CX 9300 Switch Series

—HPE Aruba Networking Network Analytics Engine (NAE) —Dynamic segmentation —Virtual Switching Extension —High availability and resiliency —Quality of service (QoS) —Layer 2 switching —Layer 3

Broadcom Ships Tomahawk 6: World''s First 102.4 Tbps Switch

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Broadcom Inc. (NASDAQ:AVGO) announced today that it is now shipping the Tomahawk® 6 switch series, delivering the world''s first 102.4 Terabits/sec of switching

Arista Platforms 400GbE

Arista Networks is the leader in building scalable high-performance and ultra-low latency Ethernet Switches and Network Switch Platforms 400GbE - 100GbE - 40GbE - 25GbE - 10GbE

Cisco Catalyst 9600 Series Switches

Catalyst 9600 Series switches offer a more secure experience and bring exceptional automation, analytics, speed, and scale to your access network.

Switch Capacity vs Forwarding Rate vs Bandwidth Explained

Explore the critical distinctions between switching capacity, forwarding rate, and bandwidth in network switches. Understand how they impact your network.

Huawei CloudEngine 12800 Switch Datasheet

Huawei CloudEngine 12800 Switch Datasheet Huawei CloudEngine 12800 series switches use an advanced hardware architecture design, providing as much as 178Tbit/s (scalable to 1032 Tbps)

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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