Cisco

C1-C4500X-F-16SFP+

Datasheet

Product Overview

- The Cisco Catalyst 4500-X Series is an enterprise-class fixed aggregation switch built for advanced scalability and services.

- Ideal for campus networks, this platform is perfect for enterprise branches, education, and organizations seeking compact yet robust aggregation.

- Key hardware metrics include up to 800 Gbps switching capacity, 16 ports of 1G/10G SFP+, and support for modular uplinks for flexible expansion.

- Distinctive features include Cisco Easy Virtual Networks (EVN), Virtual Switching System (VSS), and integrated network services for modern applications.

- Centralized deployment and management with Cisco IOS XE, VSS stacking, and Smart Install simplify setup and daily operations.

- Designed for fast-growing businesses, the 4500-X Series ensures seamless scalability, simplified virtualization, and high reliability for mission-critical scenarios.

Product Highlights

- **Platform Scalability:** Offers up to 800 Gbps switching capacity, scalable to 1.6 Tbps with VSS, supporting modular uplinks and auto-detect 10G/1G ports.

- **High Availability:** Achieves resilient network uptime through redundant hot-swappable fans, power supply failover, and advanced VSS/EVN high availability.

- **Robust Security:** Features Cisco TrustSec™, comprehensive control plane policing (CoPP), and defense against denial-of-service attacks for secure deployments.

- **Simplified Operations:** Smart Install Director enables single-point management and zero-touch deployment of new switches for campus and branch networks.

Detailed Features

C1-C4500X-F-16SFP+

Component	Specification
Total Ports	16 × 1G SFP/10G SFP+
Switching Capacity	800 Gbps
Form Factor	Rack-mountable
Expansion Slots	1 SD memory card, 1 expansion slot
Management	Cisco IOS XE, RJ-45 Console, USB Type A

High Performance Switching

The Catalyst 4500-X delivers a top-tier switching capacity up to 800 Gbps, rising to 1.6 Tbps in VSS stacking mode. This impressive raw throughput meets the demands of data-heavy enterprise and campus environments, ensuring sufficient headroom for simultaneous multi-service traffic such as voice, video, and cloud applications without bottlenecks.

Advanced Virtualization Capabilities

Offering one-to-many network virtualization with Cisco Easy Virtual Networks (EVN) and many-to-one with Virtual Switching System (VSS), this switch streamlines network segmentation and management. These features ease multi-tenant deployments in education, enterprise, or branch scenarios, allowing secure network partitioning and simplified operation.

Comprehensive High Availability

The 4500-X is engineered for maximum network uptime, integrating dual hot-swappable fans, redundant power supplies with both AC and DC failover schemes, and stateful failover. Advanced protocols such as VSS and EVN work in tandem, ensuring continuous network service even under failure situations, which is vital for business-critical applications.

Enhanced Application Visibility

With Flexible NetFlow, real-time full monitoring, and up to eight line-rate bidirectional SPAN/RSPAN ports, IT teams get detailed insight into application traffic patterns. The built-in ability to host third-party applications through Cisco IOS XE offers further analysis and security, supporting proactive network management and troubleshooting.

Robust Security Framework

Cisco TrustSec™ support, access control lists, and control plane policing (CoPP) offer comprehensive security for enterprise networks. These safeguards ensure segmentation, user authentication, and protection against denial-of-service attacks, delivering a secure switching platform fit for financial, healthcare, and government applications.

Flexible Deployment and Expansion

The modular design enables adaptation as business needs evolve, supporting both 10G and 1G modules with auto-detection. Ports, uplinks, and expansion slots offer seamless upgrades, making it future-ready for bandwidth-intensive or evolving network layouts across distributed campuses.

Operational Simplicity

Smart Install Director and other automation features enable zero-touch provisioning for large-scale deployments. The switch provides central management, inventory tracking, and disaster recovery tools, reducing IT operational workload and risk of manual errors throughout global enterprise and service provider environments.

Resilient Environmental Design

Front-to-back airflow, advanced thermal management, robust compliance with international standards, and wide temperature tolerance assure stable operation in diverse environments. The switch can be confidently deployed in enterprise, education, or metro edge scenarios demanding constant reliability.

Technical Specifications

Product Specifications

Feature	Value
Device Type	Switch - 16 ports
Enclosure Type	Rack-mountable
Subtype	10 Gigabit Ethernet
Ports	16 x 1 Gigabit SFP/ 10 Gigabit SFP+
Performance	Throughput: 800 Gbps ¦ IPv4 routing: 250 Mpps ¦ IPv6 routing: 125 Mpps
IPv4 Forwarding Table Entries	64000
IPv6 Forwarding Table Entries	32000
NetFlow Entries	128000
Virtual Interfaces (VLANs)	4094

Feature	Value
IGMP Groups	32000
Multicast Entries (IPv4)	24000
Multicast Entries (IPv6)	12000
ARP Entries	47000
Spanning Tree Protocol Instances	10000
QoS Hardware Queues	64
QoS Hardware Entries	128000
ACL Entries	131072
MAC Address Table Size	55K entries
Jumbo Frame Support	9216 bytes
Remote Management Protocol	RMON 1, RMON 2
Features	Layer 2 switching, VLAN support, Access Control List (ACL) support, Quality of Service (QoS), front to back airflow, redundant hot swappable fans
Compliant Standards	IEEE 802.3, IEEE 802.1D, IEEE 802.1Q, IEEE 802.1p, IEEE 802.3ad (LACP), IEEE 802.1w, IEEE 802.1x, IEEE 802.3ae, IEEE 802.1s
Processor	1.5 GHz
RAM	4 GB DDR2 SDRAM
Flash Memory	2 GB (max)
Interfaces	16 x 10Gbit LAN SFP+ ¦ 1 x management (Gigabit LAN) RJ-45 ¦ 1 x USB Type A ¦ 1 x console RJ-45
Expansion Slots	1 (total) / 1 (free) x SD Memory Card ¦ 1 (total) / 1 (free) x expansion slot
Power Device	Internal power supply - hot-plug
Installed Qty	0 (installed) / 2 (max)
Power Redundancy	Optional
Power Redundancy Scheme	1+1 (with optional power supply)
Power Consumption Operational	330 Watt
MTBF	209,330 hours
Compliant Standards	CISPR 22 Class A, BSMI CNS 13438 Class A, CISPR 24, EN 61000-3-2, VCCI Class A ITE, EN 61000-3-3, EN55024, EN55022 Class A, AS/NZS 60950-1, ICES-003 Class A, RoHS, FCC CFR47 Part 15, EN300-386, UL 60950-1, AS/NZS, CSA C22.2 No. 60950-1 Second Edition, EN 60950-1 Second Edition, IEC 60950-1 Second Edition

Feature	Value
Software Included	Cisco IOS IP Base
Min Operating Temperature	32 °F
Max Operating Temperature	104 °F
Min Storage Temperature	-40 °F
Max Storage Temperature	158 °F

Product Comparison

Feature	C1-C4500X-F-16SFP+	C1-N5596T-FA	C1-WS3850-24S/K9
Switching Capacity	800 Gbps (up to 1.6 Tbps with VSS)	1920 Gbps	680 Gbps
Total Ports	16 × 1G/10G SFP+	48 × 1G/10G SFP+	24 × 1G SFP
Modular Uplinks	Yes, modular	Yes, modular	No
Stacking/ Virtualization	Supports VSS, EVN	Supports Fabric Extenders	StackWise-480 technology
Power Redundancy	1+1 (optional PSUs)	1+1 (included PSUs)	1+1 (Field Replaceable Units)
Security Features	TrustSec, CoPP	TrustSec, MACsec	TrustSec, MACsec, Advanced ACLs
Management	Cisco IOS XE, Smart Install	NX-OS	Cisco IOS XE, Device Manager
Application Scenario	Aggregation/Core	Data Center Aggregation	Campus/Branch Access

Accessories

Category	Accessories
Included Accessories	- Power Supply (not included by default) - Rack Mount Kit - Console Cable
Optional Accessories	- SFP/SFP+ Transceiver Modules - Redundant Power Supply - SD Memory Card

Support & Warranty

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Service

3-Year Premium
Warranty
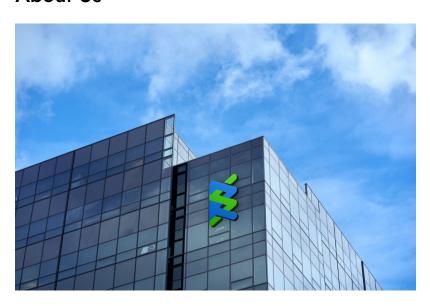
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References

[1] Cisco Systems. (2024). Catalyst 4500-X Series Switches Datasheet. Retrieved from https://www.cisco.com/c/en/us/products/collateral/switches/catalyst-4500-x-series-switches/data_sheet_c78-696791.html