



Cisco

C1-C4500X-24X-IPB

Datasheet

Product Overview

- Cisco's Catalyst 4500-X Series Switch delivers high-performance aggregation in a compact 1U form factor ideal for growing networks.
- The switch targets enterprise campus core environments, IT integrators, and distributed branch offices requiring robust throughput.
- It features 24 x 10 Gigabit SFP+ ports, supports up to 800 Gbps switching capacity, and offers 1.6 Tbps with VSS for future expansion.
- The switch simplifies virtualization for multi-tenant architectures with native VSS and EVN support built in.
- Advanced services like Flexible Netflow, enhanced security, and integrated application hosting streamline complex management tasks.
- Designed for evolving digital workplaces, the 4500-X empowers IT teams to scale securely, reduce downtime, and adapt to changing campus needs.

Product Highlights

- **High Scalability:** Up to 800 Gbps switching capacity, expandable to 1.6 Tbps with VSS technology for future-ready network environments.
- **Unmatched Uplink Flexibility:** Modular uplink design supports both 10G and 1G auto-detect ports, providing easy adaptation to various deployment needs.
- **Comprehensive High Availability:** Redundant hot-swappable fans and power supplies with AC/DC failover ensure robust reliability and zero single-point failure.
- **Advanced Application Monitoring:** Flexible Netflow, multiple SPAN/RSPAN ports, and third-party app support with Cisco IOS XE boost monitoring and visibility.

Detailed Features



C1-C4500X-24X-IPB

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Component	Specification
Form Factor	Rack-mountable 1U
Port Type	24 x 10 Gigabit SFP+
Switching Capacity	Up to 800 Gbps (1.6 Tbps with VSS)
Uplink Flexibility	Auto-detect 10G/1G SFP+ ports
Power Supply	Hot-swappable (redundant supported)



High-Performance Aggregation

The Catalyst 4500-X delivers up to 800 Gbps switching capacity and scales up to 1.6 Tbps with Virtual Switching System (VSS) technology. This ensures optimal performance for bandwidth-intensive environments and future-proofs investments as network traffic increases. The architecture enables line-rate forwarding across all 24 SFP+ ports for data-intensive campus applications and core aggregation workloads.

Expandable Uplink Architecture

With modular uplink options and auto-detection for 10GE and 1GE SFP+ ports, the switch adapts to modern network requirements. Enterprises can seamlessly upgrade uplink bandwidth as demands grow, supporting both legacy and next-generation connections without the need to replace hardware or disrupt ongoing operations.

Advanced High Availability

The device offers full high-availability support through active-active VSS, redundant, hot-swappable fans, and dual power supplies with both AC to DC and DC to AC failover. This redundancy design makes the system resilient to hardware failures, ensuring mission-critical applications and services remain continuously available.

Virtualization Support

The Catalyst 4500-X integrates Cisco Easy Virtual Network (EVN) for one-to-many and VSS for many-to-one network virtualization. These features simplify management of segmented networks in multi-tenant campus or branch environments and allow flexible partitioning of resources, improving both security and operational efficiency.

Comprehensive Application Visibility

Flexible Netflow and dedicated SPAN/RSPAN ports allow detailed application monitoring and traffic analysis. Administrators can gain better insights into network usage, quickly detect anomalies, and comply with organizational policies using these robust monitoring capabilities, all without impacting core network performance.

Integrated Security Solutions

Cisco TrustSec technology and control plane policing (CoPP) work together to secure the network infrastructure. These mechanisms guard against unauthorized access, defend against Denial of Service (DoS) attacks, and establish secure segmentation between users vital for compliance in finance, healthcare, and education sectors.

Intelligent, Simplified Operations

With Smart Install Director, IT teams benefit from zero-touch deployment and centralized management. This reduces administrative overhead and accelerates setup, allowing seamless provisioning of new devices across the campus or branch sites through a single point of control.

Energy-Efficient Design

Front-to-back airflow, energy-optimized hardware design, and support for redundant hot-swappable modules contribute to reduced operational costs. These features help data centers and enterprise campuses improve power efficiency while maintaining high performance and reliability.

Technical Specifications

Product Specifications

Feature	Value
Device Type	Switch - 24 ports - managed
Enclosure Type	Rack-mountable 1U
Subtype	10 Gigabit Ethernet
Ports	24 x 10 Gigabit SFP+
Performance Throughput	800 Gbps IPv4 routing: 250 Mpps IPv6 routing: 125 Mpps
Capacity IPv4 Forwarding Table Entries	64000
Capacity IPv6 Forwarding Table Entries	32000
Capacity NetFlow Entries	128000
Capacity Virtual Interfaces (VLANs)	4094



Feature	Value
Capacity IGMP Groups	32000
Capacity Multicast Entries (IPv4)	24000
Capacity Multicast Entries (IPv6)	12000
Capacity ARP Entries	47000
Capacity Spanning Tree Protocol Instances	10000
QoS Hardware Queues	64
QoS Hardware Entries	128000
ACL Entries	128000
NetFlow Entries	128000
MAC Address Table Size	55K entries
Jumbo Frame Support	9216 bytes
Remote Management Protocol	RMON 1, RMON 2
Features	VLAN support, Spanning Tree Protocol (STP) support, Rapid Spanning Tree Protocol (RSTP) support, Multiple Spanning Tree Protocol (MSTP) support, Access Control List (ACL) support, Quality of Service (QoS), front to back airflow, redundant hot swappable fans, Class of Service (CoS)
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)
Expansion / Connectivity Interfaces	24 x 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) / 0 (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



Feature	Value
Compliant Standards	CISPR 22 Class A, BSMI CNS 13438 Class A, CISPR 24, EN 61000-3-2, EN 61000-3-3, EN55024, EN55022 Class A, AS/NZS 60950-1, ICES-003 Class A, RoHS, UL 60950-1 Second Edition, CSA C22.2 No. 60950-1 Second Edition, EN 60950-1 Second Edition, IEC 60950-1 Second Edition, GR-1089-CORE, VCCI Class A, KN24, GR-63-CORE, KN22 Class A, EN 300386
Software Included	Cisco IOS IP Base
Width	17.2 in
Depth	21.8 in
Height	1.7 in
Weight	20 lbs
Service & Support	Limited warranty - advance parts replacement - lifetime - response time: 10 days
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-24X-IPB	C1-WS3650-24TD/K9	WS-C4948E
Switching Capacity	800 Gbps (up to 1.6 Tbps with VSS)	160 Gbps	176 Gbps
Forwarding Rate	250 Mpps (IPv4)	65.5 Mpps	131 Mpps
Ports	24 x 10G SFP+	24 x 1G SFP + 2 x 10G SFP+	48 x 1G RJ-45 + 4 x 1G SFP
Redundant Power	Supported, hot-swappable (optional)	Supported	Supported
Virtualization Support	VSS, EVN	StackWise, VRF-lite	None
Management	Centralized with Smart Install, Flexible Netflow	Web GUI, CLI, SNMP	CLI, SNMP
PoE Support	No	No	No
High Availability Features	Redundant fans/power supplies, AC/DC failover	Redundant power, fan modules	Field-replaceable fans/power supplies



Feature	C1-C4500X-24X-IPB	C1-WS3650-24TD/K9	WS-C4948E
Application Monitoring	Flexible Netflow, SPAN/RSPAN	sFlow, NetFlow Lite	SPAN
Form Factor	1U Rack-mountable	1U Rack-mountable	1U Rack-mountable

Accessories

Category	Accessories
Included Accessories	- Internal Power Supply - Mounting Kit - Console Cable
Optional Accessories	- SFP+ Transceivers - Redundant Power Supply - SD Memory Card



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References

[1] Cisco. (2023). Cisco 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