

Cisco

C1-C4500X-32SFP+

Datasheet



Product Overview

- The Cisco® Catalyst® 4500-X Series represents Cisco's advanced aggregation switch line for enterprise campus environments.
- Engineered for campus LANs and data center interconnects, it serves mid-sized businesses, integrators, and network managers seeking reliable scalability.
- It features 32 × 1G or 10G Ethernet ports, delivers up to 800 Gbps switching capacity, and supports powerful 1.6 Tbps scaling with VSS.
- Key differentiators include unified virtualization support, built-in application monitoring with Flexible Netflow, and robust platform security.
- Management is simplified through centralized tools, modular uplink expansion, and zero-touch deployment support, ensuring smooth network operations.
- This switch empowers enterprises to meet business growth, streamline campus network virtualization, and ensure high availability in space-constrained deployments.

Product Highlights

- **High Scalability:** Delivers up to 800 Gbps capacity and expands to 1.6 Tbps with VSS, ensuring future-ready performance for network growth.
- **Guaranteed Availability:** Built for critical enterprise uptime with redundant, hot swappable fans and dual power supplies for seamless failover.
- **Comprehensive Monitoring:** Includes Flexible Netflow, 8-port bidirectional SPAN/RSPAN, and supports on-box app hosting via Cisco IOS® XE.
- **Secure and Streamlined:** Features Cisco TrustSec™, control plane policing (CoPP), and Smart Install for simplified secure deployments.

Detailed Features



C1-C4500X-32SFP+

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Component	Specification
Ethernet Ports	32 × 1G or 10G (requires SFP/SFP+ modules)
Expansion Slot	1 × 8 × 10GE SFP+/SFP (C4KX-NM-8SFP+)
Switching Capacity	Up to 800 Gbps (scalable to 1.6 Tbps with VSS)
Power Supply	Dual redundant, hot swappable
Fan Units	5 field replaceable fans



Advanced High-Performance Switching

The Cisco Catalyst 4500X features a non-blocking switching fabric delivering up to 800 Gbps throughput and scalable to 1.6 Tbps with Virtual Switching System (VSS). This robust performance empowers high-density aggregation and interconnects, guaranteeing minimal bottlenecks and future-oriented scalability.

Unified Virtualization & Flexible Networking

With integrated support for Cisco Easy Virtual Networks (EVN) and Virtual Switching System (VSS), the switch allows flexible one-to-many and many-to-one virtual network deployments. Enterprises can optimize resources and isolate services on a single high-performance platform, simplifying large-scale segmentation.

Comprehensive Integrated Security

Embedded Cisco TrustSec™ ensures robust network-wide identity-based security, while advanced control plane policing (CoPP) logic protects against DDoS and malicious attacks. Layer 2/3 ACLs and 802.1x make compliance and granular access enforcement straightforward across all ports and users.

Real-Time Application Visibility

Flexible Netflow combined with 8-port bidirectional SPAN/RSPAN provides granular real-time traffic and application flow monitoring. This enables timely performance analysis, capacity planning, and expedited troubleshooting for mission-critical operational continuity.

Hot-Swappable Redundancy

All fans and power supplies are hot-swappable, with AC/DC failover mechanics, eliminating single points of failure. Any fan failure triggers redundancy capabilities, ensuring uninterrupted operation with zero network impact.

Enhanced Quality of Service (QoS)

Advanced QoS policies offer up to 128K entries, supporting per-port, per-VLAN, and rate-limiting controls. These features optimize critical traffic, enforce policies efficiently, and guarantee consistent service levels for real-time applications and multi-tenant scenarios.

Centralized and Automated Management

Featuring Smart Install Director, the switch enables single-point management and zero-touch deployments for rapid network rollouts. USB/SD storage facilitates user-friendly firmware upgrades and backups, meeting operational requirements of remote sites and growing branches.

Investment Protection and Modular Expansion

The system supports modular uplink expansion and external SD memory. Enterprise clients can future-proof their infrastructure investment while scaling network architecture cost-effectively according to evolving business and application needs.

Technical Specifications

Product Specifications

Feature	Value
Expansion Module	Optional 8x10 GE SFP+/SFP - C4KX-NM-8SFP+
Management Port	10/100/1000 Base-T
USB Port	Type A (storage and boot) up-to 4 GB
Dual Power Supply	Yes
Field Replaceable Fans	Yes (5 fans)
Fan Redundancy	No performance impact with single fan failure
System Throughput	Up to 800 Gbps
IPv4 Routing in Hardware	Up to 250 Mpps
IPv6 Routing in Hardware	Up to 125 Mpps
L2 Bridging in Hardware	Up to 250 Mpps
MAC Entries	55K



Feature	Value
Forwarding Entries	32x10 GE Port Base SKU: IPv4: 256K, IPv6: 128K
Flexible Netflow Entries	128K
SPAN/RSPAN Sessions	8 line rate bidirectional sessions (ingress and egress)
Total VLANs	4094
Total Switched Virtual Interfaces (SVIs)	4094
IGMP groups	32K
Multicast routes	32x10 GE Port Base SKU: IPv4: 32K, IPv6: 32K
DHCP Snooping Entries	12K (DHCP snooping bindings)
ARP Entries	47K
Spanning Tree Protocol Instances	10K
Jumbo Frame Support	For Bridged and Routed Packets Up to 9216 bytes
High Availability Solution	Virtual Switching System (VSS)
Number of stackable switches in VSS	Up to 2
VSS Throughput	Up to 1.6 Tbps
Virtual Switch Link	1GE or 10GE
Max number of Virtual Switch Links	8
In-Service Software Upgrade	Across the switches
Nonstop Forwarding	With Stateful Switchover Across the switches
Onboard Memory (SRAM DDR-II)	4 GB
Port Buffers	32-MB Shared Memory
CPU	Dual Core 1.5 GHz
NVRAM	2 GB
Optional External Memory (SD Card)	2 GB
Port Queues	8 Queues/Port
CPU Queues	64
QoS Entries	128K (64K ingress and 64K in egress) Shared with ACL
Aggregate Rate-Limiting	Ingress port or VLAN and egress VLAN or Layer 3 port
Rate-Limiting Level Types	Committed Information Rate (CIR), Peak Information Rate (PIR)
Aggregate Traffic Rate-Limiting Policers (1K=1024)	16K
Flow-Based Rate-Limiting Method	Number of Rates Supported using flow-records in the



Feature	Value
	classification criteria and policing action
Qos Policy Enforcement	Per Port or Per Vlan or Per Port, Per VLAN Granularity
Class of Service (CoS)	Yes
Differentiated Services Code Point (DSCP)	Yes
Port Security	Yes
IEEE 802.1x and 802.1x Extensions	Yes
VLAN, Router, and Port ACLs	Yes
Security ACL Entries (1K=1024)	128K (64K ingress and 64K in egress) Shared with QoS
Unicast Reverse Path Forwarding (uRPF) Check in Hardware	Yes
CPU Rate Limiters (DoS Protection)	Includes Control Plane Policing
Private VLANs	Yes
Micro Flow Policer	Yes
CPU HW Rate Limiters	by Packet Per Second (pps) and Bit Rate Policers (bps)
Control Plane Policing (CoPP) for Multicast ACL Labels	Yes
Supported using flow records in the class-map	Yes
Supported in hardware control-plane policing (CoPP)	Yes



Product Comparison

Feature	C1-C4500X-32SFP+	C1-C6880-X-LE	C9300-24S-A
Fixed Ports	32 × 1G/10G SFP+/SFP	16 × 10G/1G SFP+	24 × 1G SFP
Switching Capacity	800 Gbps (1.6 Tbps with VSS)	2.56 Tbps	128 Gbps
Forwarding Rate	250 Mpps (IPv4)	1,053 Mpps	95.24 Mpps
Redundant Power	Supported (dual, hot-swappable)	Supported	Supported
Hot-Swappable Fans	Yes (5 fans)	Yes	Yes
Virtualization	Supports EVN & VSS	VSS, extensive virtualization	StackWise-480
ACL Capacity	128K entries	Up to 64K	Up to 6K
Application Monitoring	Flexible Netflow, SPAN/RSPAN	Flexible Netflow	Netflow Lite
Management	Smart Install, centralized	Smart Install, built-in controller	Web UI, CLI, network plug and play

Accessories

Category	Accessories
Included Accessories	<ul style="list-style-type: none"> - Dual Power Supplies - Mounting Kit - Console Cable
Optional Accessories	<ul style="list-style-type: none"> - 10G SFP+ Transceiver - Uplink Expansion Module (C4KX-NM-8SFP+)



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References

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