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Cisco Catalyst 4500-X Series Fixed 10 Gigabit Ethernet Aggregation Switch

PB696811

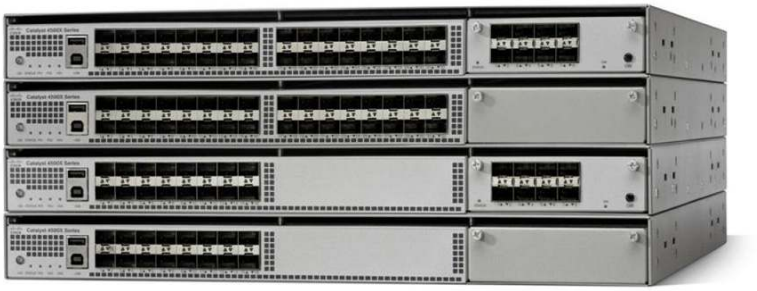
Overview

Cisco® Catalyst® 4500-X Series Switch (Figure 1) is a fixed aggregation switch that delivers best-in-class scalability, simplified network virtualization, and integrated network services for space-constrained environments in campus networks. It meets business growth objectives with unprecedented scalability, simplifies network virtualization with support for one-to-many (Cisco Easy Virtual Networks [EVN]) and many-to-one (Virtual Switching System[i] [VSS]) virtual networks, and enables emerging applications by integrating many network services.

The Cisco Catalyst 4500-X Series offers key innovations, including:

- **Platform scalability:** Delivers up-to 800 Gbps of switching capacity, scaling to 1.6-terabit capacity with VSS[i]. Future-proof investment with modular uplink and auto-detect 10 Gigabit Ethernet and 1 Gigabit Ethernet ports.
- **High availability:** These switches deliver the network availability demanded by business-critical enterprise applications through comprehensive high-availability capabilities, including VSS and EVN. Furthermore, innovative features such as redundant hot swappable fans and power supplies with AC to DC, and DC to AC failover remove single point of failure in network.
- **Application monitoring:** Enhanced application monitoring through Flexible Netflow and eight ports of line rate bidirectional Switched Port Analyzer (SPAN)/Remote Switched Port Analyzer (RSPAN). In addition Cisco IOS® XE Software provides the ability to host third-party applications.
- **Security:** Support for Cisco TrustSec™ technology as well as robust control plane policing (CoPP) to address denial of service attacks.

Figure 1. Cisco Catalyst 4500-X Series Switch Family



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Cisco Catalyst 4500-X Series Switch Family

Cisco Catalyst 4500-X Series provides scalable, fixed-campus aggregation solutions in space-constrained environments. The solution provides flexibility to build desired port density through two versions of base switches along with optional uplink module. Both the 32- and 16-port versions can be configured with optional network modules and offer similar features. The Small Form-Factor Pluggable Plus (SFP+) interface supports both 10 Gigabit Ethernet and 1 Gigabit Ethernet ports, allowing customers to use their investment in 1 Gigabit Ethernet SFP and upgrade to 10 Gigabit Ethernet when business demands change, without having to do a comprehensive upgrade of the existing deployment. The uplink module is hot swappable.

Following are key offering from this product family:

- 32 x 10 Gigabit Ethernet Port switch with optional module slot (Figure 2)
- 16 x 10 Gigabit Ethernet Port switch with optional module slot[ii] (Figure 3)
- 8 x 10 Gigabit Ethernet Port uplink module (Figure 4)

Figure 2. 32 x 10 Gigabit Ethernet Port Switch with Optional Uplink Module Slot



Figure 3. 16 x 10 Gigabit Ethernet Port Switch with Optional Uplink Module Slot



Figure 4. 8 x 10 Gigabit Ethernet Port Uplink Module



In addition, both 32 port and 16 port versions are available with front-to-back and back-to-front airflow. The front-to-back airflow switch comes with matching burgundy color fan and power supply handle to indicate warm side. Similarly back-to-front airflow switch fan and power supply handles are color coded blue to indicate cool side. Figure 5 and Figure 6 show rear view of the switch with front-to-back and back-to-back airflow respectively.

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Figure 5. Front-to-Back Airflow Rear View



Figure 6. Front-to-Back Airflow Rear View



Cisco Catalyst 4500-X switch provides redundant hot swappable fans and power supplies (Figure 7) for highest resiliency with no single point of failure.

Figure 7. Redundant Fan and Power Supply



Cisco Catalyst 4500-X Switch Series Feature Highlights

Cisco Catalyst 4500-X Series Switch provides nonblocking 10 Gigabit Ethernet per port bandwidth and Cisco IOS Flexible NetFlow for optimized application visibility. In addition to this, the enterprise-class Cisco Catalyst 4500-X offers the following:

- **Performance and scalability**
  - 800-Gbps switching capacity with 245 Mpps of throughput
  - External USB and SD card support for flexible storage options
  - 10/100/1000 RJ-45 console and management port
  - IPv6 support in hardware, providing wired-network-rate forwarding for IPv6 networks and support for dual stack with innovative resource utilization
  - Dynamic hardware forwarding-table allocations for ease of IPv4-to-IPv6 migration
  - Scalable routing (IPv4, IPv6, and multicast) tables, Layer 2 tables, and ACL and quality of service (QoS) entries to make use of eight queues per port and comprehensive security policies per port
- **Infrastructure services**
  - Cisco IOS XE Software, the modular open application platform for virtualized borderless services
  - Maximum resiliency with redundant components, Nonstop Forwarding/Stateful Switchover (NSF/SSO), and In-Service Software Upgrade (ISSU) support in a VSS[i] enabled system

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- Network virtualization through Multi-VRF technology for Layer 3 segmentation
- Automation through Embedded Event Manager (EEM), Cisco Smart Call Home, AutoQoS, and Auto SmartPorts for fast provisioning, diagnosis, and reporting

- **Cisco Borderless Networks services**
  - Optimized application performance through deep visibility with Flexible NetFlow supporting rich Layer 2/3/4 information (MAC, VLAN, TCP flags) and synthetic traffic monitoring with IP service-level agreement (SLA)
  - Medianet capabilities to simplify video quality of service, monitoring, and security. In addition, multicast features such as Protocol Independent Multicast (PIM) and Source-Specific Multicast (SSM) provide enterprise customers with the additional scalability to support multimedia applications
- **Investment protection and reduced TCO**
  - Cisco Catalyst 4500-X Series eliminates the need for standalone solutions by integrating many network services. Customers can lower the total cost of ownership while streamlining management and accelerating deployment time. Integrated network services available on Cisco Catalyst 4500-X Series include:
    - Application visibility and control (Flexible NetFlow, Cisco IOS Embedded Event Manager)
    - Security with Cisco TrustSec
    - Troubleshooting video or any User Datagram Protocol-based flows (Mediatrace)
    - Video network readiness assessment (built-in traffic simulator)
    - Ability to run third-party applications (Wireshark)

Table 1. Ordering Information

Product Number	Description
Base Switch PIDs	
WS-C4500X-16SFP+[ii]	Catalyst 4500-X 16 Port 10GE IP Base with Single Power Supply, Front-to-Back Cooling i.e. Port Side to Power Supply Cooling
WS-C4500X-24X-ES	Catalyst 4500-X 24 Port 10GE Enterprise Services with Dual Power Supply
WS-C4500X-32SFP+	Catalyst 4500-X 32 Port 10GE IP Base, Front-to-Back Cooling i.e. Port Side to Power Supply Cooling
WS-C4500X-40X-ES	Catalyst 4500-X 40 Port 10G Enterprise Services with Dual Power Supply
C4KX-NM-8SFP+	Catalyst 4500-X 8 Port 10GE Network Module
WS-C4500X-F-16SFP+[ii]	Catalyst 4500-X 16 Port 10GE IP Base, Back-to-Front Cooling i.e. Power Supply to Port Side Cooling
WS-C4500X-F-32SFP+	Catalyst 4500-X 32 Port 10GE IP Base, Back-to-Front Cooling i.e. Power Supply to Port Side Cooling
FRU and OIR FANs	
C4KX-FAN-F	Catalyst 4500-X Back-to-Front Cooling Fan
C4KX-FAN-R	Catalyst 4500-X Front-to-Back Cooling Fan
Power Supply	
C4KX-PWR-750AC-F	Catalyst 4500-X 750W AC Back-to-Front Cooling Power Supply
C4KX-PWR-750AC-R	Catalyst 4500-X 750W AC Front-to-Back Cooling Power Supply
C4KX-PWR-750DC-F	Catalyst 4500-X 750W DC Back-to-Front Cooling Power Supply
C4KX-PWR-750DC-R	Catalyst 4500-X 750W DC Front-to-Back Cooling Power Supply
Accessories	
CAB-CON-C4K-RJ45	Console Cable 6ft with RJ-45-to-RJ-45
SD-X45-2GB-E	Cisco Catalyst 4500 2-GB SD card

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Product Number	Description
USB-X45-4GB-E	Cisco Catalyst 4500 4-GB USB device
Software	
S45XU-33-1511SG	Cisco Catalyst 4500-X Cisco IOS Software XE Release 3.3.0 SG noncrypto universal image
S45XUK9-33-1511SG	Cisco Catalyst 4500-X Cisco IOS Software XE Release 3.3.0 SG crypto universal
C4500X-LIC=	Base product ID for software upgrade licenses on Catalyst 4500-X (paper delivery)
C4500X-IPB	Catalyst 4500-X IP BASE software license (paper delivery)
C4500X-IP-ES	Catalyst 4500-X IP BASE to Enterprise Services upgrade license (paper delivery)
L-C4500X-LIC=	Catalyst 4500-X Base product ID for software upgrade licenses (electronic delivery)
L-C4500X-IPB	Catalyst 4500-X IP BASE software license (electronic delivery)
L-C4500X-IP-ES	Catalyst 4500-X IP BASE to Enterprise Services upgrade license (electronic delivery)

For additional information, visit http://www.cisco.com/go/4500x.

Cisco and Partner Services

Enable the innovative, secure, intelligent edge in Cisco Borderless Network Architecture using personalized services from Cisco and our partners. Through a discovery process that begins with understanding your business objectives, we help you integrate the next-generation Cisco Catalyst 4500-X Series Switches into your architecture and incorporate network services onto that platform. Sharing knowledge and leading practices, we support your success every step of the way as you deploy, absorb, manage, and scale new technology.

For additional information about Cisco services, visit: http://www.cisco.com/go/services.

For More Information

For additional information about Cisco products, contact:

- United States and Canada: (toll free) 800 553-NETS (6387)
- Europe: 32 2 778 4242

[i] Software Roadmap 2nd Half of CY2012
[ii] Target 2nd Half of CY2012

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