



Cisco Catalyst Switch Guide

Scalable, intelligent LAN switching for campus, branch, and data center networks of all sizes

Cisco® Catalyst® 6500 and Catalyst 4500 Series Modular Switches

Cisco Catalyst 4900, Catalyst 3750-E, Catalyst 3750, Catalyst 3560-E, Catalyst 3560, Catalyst 2960, Catalyst 2940, and Catalyst Express Series Fixed-Configuration Switches

Spring 2009 V.4

Cisco Catalyst Switches

Scalable, intelligent LAN switching for Campus, Branch, and Data Center networks of all sizes.

This is your guide to Cisco® Catalyst® switches, the industry's most advanced and versatile portfolio of modular and fixed-configuration LAN switches.

Individually, these switches offer the performance and features required for virtually any deployment, from small workgroups and wiring closets to corporate data centers and network cores. Working together, they are the building blocks of an integrated network that delivers intelligent services from the wiring closet to the core—protecting, optimizing, and growing your network as your business needs evolve.

The network is the platform for transforming the way people live, work, and play by enhancing application performance and creating new experiences. The proliferation of powerful desktop computers, bandwidth-intensive applications, and new devices, such as wireless access points, IP phones, and video surveillance has left networks—and network managers—looking for holistic and simple solutions to their business challenges.

Cisco, the worldwide leader in networking systems for organizations of every size, offers an architectural approach to networking that makes it easy for organizations to adapt and grow. As part of the foundation of the human network, Cisco Catalyst switches provide the application intelligence, unified network services, integrated security, non-stop communications, virtualization, and operational manageability needed for today's most valuable converged network services, including networked applications, IP voice and video, wireless access, and other demanding applications.

Cisco Catalyst Switches

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Series Overview

Intelligent Switching for the Integrated Network

From edge to core, Cisco Catalyst switches provide a complete range of services for all levels of application intelligence, unified network services, integrated security, virtualization, non-stop communications and operational manageability.

Modular Switches



Cisco Catalyst 6500 Series

The flagship Catalyst switching platform delivers the highest levels of services for every place in the network. Industry-leading scalability (32 Gbps to 1.4 Tbps) and the broadest offering of interfaces provide excellent solutions for the Wiring Closet, Distribution, Core, Data Center, Wide-Area Network routing, and Metro-Ethernet.

- **Integrated Security:** H/W accelerated Flexible Packet Matching, H/W-based Control Plane Policing; Integrated H/W NetFlow; 802.1x enhancements; firewall, intrusion prevention and anomaly detection modules
- **Operational Manageability:** Smart Call Home, Adaptive Control Technology, In-Service Software Upgrades; Encapsulated Remote SPAN; Embedded Event Manager; Network Analysis Module
- **Flexible Options:** Modular 3-, 4-, 6-, 9-, and 13-slot chassis all support redundant supervisors; wide range of AC and DC power supplies (950W to 8,700W)
- **Virtualization:** Scalability up to 1.4 Tbps with the Virtual Switching System 1440, service modules support up to 256 virtual instances, network virtualization with MPLS, VRF-Lite and GRE-Tunnels, multicast VPN
- **Non-Stop Communications:** Sub-200 ms link recovery, Cisco IOS Software Modularity, In-Service Software Upgrades
- **Application Intelligence:** H/W accelerated network based application recognition (NBAR), URL Filtering, netflow for IPv6 and multicast
- **Unified Network Services:** Highest PoE port density; enhanced PoE support for more than 15.4W per port; wireless controller module, advanced quality-of-service
- **Highest Port Densities:** Up to 1,152 10/100 ports, 770 10/100/1000 ports, 820 SFP Gigabit Ethernet ports, or 260 10 Gigabit Ethernet (10GbE) ports
- **WAN Aggregation:** Extensive choice of WAN interfaces from DSO to OC-192, FE, GbE and 10GbE; MPLS; VPLS; H-VPLS



Cisco Catalyst 4500 Series

High performance Midrange modular switches for unified communications designed for high resiliency and simplified operations, offering intelligent Layer 2–4 switching network services up to 320 Gbps and 250 mpps and exceptional investment protection for Enterprise access layer and mid-market collapsed Core and Distribution layer.

- **Unified Communications:** Cisco pre-standard and IEEE 802.3af PoE Support. 20w PoE support for 802.11n access points. Up to 30 watts per port with E-Series line cards. Extensive QoS features with up to 8 user configurable queues per port.
- **Comprehensive Security:** Integrated Network Admission Control (NAC) and 802.1x, H/W-based Control Plane Policing (CoPP); integrated man-in-the-middle and DoS attack mitigation; NetFlow, access control lists and SSH
- **Investment Protection:** Evolutionary centralized modular Architecture, media flexibility, and scalability of the Catalyst 4500 Series delivers maximum investment protection with backward and forward compatibility across several generations dating back to 1999
- **Non-stop Communications:** Redundant supervisor engines with In Service Software Upgrade (ISSU), Non-stop Forwarding/Stateful Switchover (NSF/SSO) offering 50 ms failover; redundant power supplies with power circuit redundancy; hot-swappable fan trays with redundant fans
- **Flexible Options:** 3,6,7 and 10-slot chassis supporting numerous connectivity configurations with 24 gig per slot capacity, 10/100, 10/100/1000 (PoE or Non-PoE), GE SFP Fiber and 10GE linecards. Mix and match classic line cards with high performance E-Series linecards for maximum flexibility
- **Simplified Operations:** Minimize network operational time with ISSU, EEM, AutoQoS, Smartports RSPAN; TDR, OIR, Netflow, CiscoWorks and CNA
- **High Port Density:** Up to 384 Fast Ethernet or Gigabit Ethernet Ports (PoE or Non PoE) or 34 10 Gigabit Ethernet (10GbE) ports

Series Overview (continued)

Fixed-configuration Switches



Cisco Catalyst 4900 Series

Fixed-configuration switches offering high-performance and highest availability in 1-2 RU configuration, optimized for data center top of rack server aggregation and for space constrained branch collapsed core/distribution LAN aggregation

- Standalone fixed-configuration for low-latency and wire-speed switching
- Wire-rate performance with 96-320 Gbps nonblocking switching fabric
- Layer 2-4 switching and intelligent services with dynamic IP routing and IPv6
- Configurations from 48 10/100/1000 ports to 24 10GbE ports
- TwinGig converter module for migrating from 1 Gigabit Ethernet (SFP) to 10GbE (X2) on 4900M
- Dual, hot-swappable internal AC or DC power supplies
- Hot-swappable fan trays



Cisco Catalyst 3750-E Series

Stackable switches offering multilayer switching and the enhanced Cisco StackWise™ Plus technology for enterprise branch offices and mid-market organizations.

- Stackable fixed-configuration switches featuring Cisco StackWise Plus technology, a 64 Gbps interconnect for a unified, resilient system of up to nine switches (including Cisco Catalyst 3750 Series switches)
- Layer 2-4 switching and intelligent services with dynamic IP routing and IPv6
- Gigabit Ethernet and upgradeable Gigabit Ethernet to 10GbE connectivity
- Up to 48 10/100/1000 ports plus two 10GbE X2 ports per stackable switch or four GbE ports
- Enhanced PoE support; the capability to power beyond 15.4W per port
- AC power supply failure protection with external power system



Cisco Catalyst 3750 Series

Stackable switches offering multilayer switching and Cisco StackWise™ technology for enterprise branch offices and mid-market organizations.

- Stackable fixed-configuration switches featuring Cisco StackWise technology, a 32 Gbps interconnect for a unified, resilient system of up to nine switches
- Layer 2-4 switching and intelligent services with dynamic IP routing and IPv6
- Fast Ethernet, Gigabit Ethernet and 10GbE connectivity
- Up to 48 10/100/1000 ports plus four SFP ports per stackable switch
- Integrated PoE (Cisco pre-standard and IEEE 802.3af); up to 24 ports with 15.4 watts or 48 ports with 73 watts
- AC power supply failure protection with external power supply



Cisco Catalyst 3560-E Series

Fixed-configuration switches combining Gigabit Ethernet connectivity and PoE for enterprise LAN access and branch offices.

- Standalone fixed-configuration switches
- Layer 2-4 switching and intelligent services with dynamic IP routing and IPv6
- Gigabit Ethernet and upgradeable Gigabit Ethernet to 10GbE uplinks
- Up to 48 10/100/1000 ports plus two 10GbE X2 ports per stackable switch or 4 Gigabit Ethernet ports
- Enhanced PoE support; the capability to power beyond 15.4W per port
- AC power supply failure protection with external power system



Cisco Catalyst 3560 Series

Fixed-configuration switches combining Gigabit Ethernet connectivity and PoE for enterprise LAN access and branch offices.

- Standalone fixed-configuration switches
- Layer 2-4 switching and intelligent services with dynamic IP routing and IPv6
- Fast Ethernet and Gigabit Ethernet connectivity
- Up to 48 10/100/1000 ports plus four SFP ports
- Integrated PoE (Cisco pre-standard and IEEE 802.3af); up to 24 ports with 15.4 watts or 48 ports with 73 watts
- AC power supply failure protection with external power supply
- Compact Fast Ethernet PoE with no fan



Cisco Catalyst 2960 Series

Fixed-configuration switches offering Fast Ethernet and Gigabit Ethernet connectivity with enhanced LAN services for mid-market and branch office networks.

- Standalone fixed-configuration switches
- Layer 2 switching with intelligent Layer 2-4 services
- Fast Ethernet and Gigabit Ethernet connectivity
- Up to 48 10/100 ports or 10/100/1000 ports
- Power over Ethernet: 24 full PoE port and 24-port (PoE supported on 8 ports) configurations
- AC power supply failure protection with external power supply
- Compact Fast Ethernet and Gigabit Ethernet switches with no fan

Fixed-configuration LAN Lite switches offering Fast Ethernet connectivity with Basic LAN services for mid-market and branch office networks.

- Standalone fixed-configuration switches
- Layer 2 switching with Basic Layer 2-4 services
- Fast Ethernet connectivity
- Up to 48 10/100 ports
- Compact Fast Ethernet model with no fan



Cisco Catalyst 2940 Series

Compact fixed-configuration switches with Fast Ethernet connectivity for workgroups, conference rooms, and classrooms.

- Standalone fixed-configuration Layer 2 switches with no fan
- Fast Ethernet connectivity with Gigabit Ethernet Uplinks
- Up to eight 10/100 ports



Cisco Catalyst Express Series

Cisco-class switches that simplify advanced services and IP Communications for businesses with 20 to 250 employees.

- Standalone fixed-configuration Layer 2 switches
- Fast Ethernet and Gigabit Ethernet connectivity
- Up to 24 10/100 ports with optional PoE
- Up to 24 10/100/100 ports plus 2 SFP ports
- Simple GUI based management

Technology Spotlight

The architectural foundation of Services Oriented Network Architecture

Cisco Systems offers the industry's most complete range of switching solutions, supporting a wide variety of deployment requirements in networks of every size. Yet Cisco Catalyst switches are much more than a collection of point products to meet isolated IT needs; they are part of an integrated approach to the broader goals of protecting, optimizing, and growing networks for years to come.

Cisco Catalyst switches provide an architectural foundation for the intelligent services that enable new applications and uses for the network.

Key Elements

Hardware Integration

At the core of Cisco's hardware integration is application-specific integrated circuit (ASIC) innovation. Cisco has developed more than one hundred ASICs for the Cisco Catalyst switching family since 1995, with each generation including more capabilities. For example, Cisco was the first vendor to integrate Layer 3 switching into hardware, and has gone on to integrate security access control lists (ACLs), quality of service (QoS) classification, and queuing across the entire Cisco Catalyst line. Cisco is also the only switching vendor to offer hardware-based services modules, which integrate key functions such as firewalling, content networking, and network analysis directly into Catalyst 6500 switches.

Predictable Performance

Cisco offers among the highest performance modular and stackable switches in the industry, but throughput alone is not enough. Organizations need to be assured of predictable performance, regardless of variables like congestion, traffic type, or the use of software- or hardware-enabled services. That's why all Cisco Catalyst switches are designed to maintain predictable performance through a unique combination of mechanisms, including Cisco Express Forwarding (CEF), Ternary Content Addressable Memory (TCAM), buffering, and congestion management. This ensures that network managers can enable complex features without fear of losing speed in their networks.

Unified Network Services

Scaling rich media applications, voice, video, and data on a single network requires a comprehensive approach to network services. The Catalyst portfolio leads the industry in Gigabit and 10 Gigabit Ethernet (10GbE) port density. Desktop Gigabit Ethernet, also called 10/100/1000, provides investment protection for future connectivity needs while also making use of the "free" LAN-on-motherboard solutions shipping on most new desktop and laptop computers. Similarly, 10GbE is being rapidly adopted in many enterprise networks, particularly in the network core, distribution, and in data center networks. Another key consideration is Power over Ethernet (PoE), which simplifies the deployment of devices such as IP phones and wireless access points. PoE eliminates the need for additional power cabling. Cisco drove the 802.3af power standard through IEEE and today offers extensions to the IEEE standard through the use of intelligent power management. In keeping with Cisco's evolutionary approach, the Cisco Catalyst line includes switches that support both pre-standard inline power as well as IEEE 802.3af-compliant devices, enabling our customers to deploy new technology while continuing to make the most of past investments. Cisco offers the highest density of IEEE 802.3af PoE devices (up to 420) in a single chassis with full power redundancy.

Virtualization

Cisco Catalyst Series switches offer a wide variety of technologies that enable the scaling of a single physical network into multiple, logical networks. Identity services such as 802.1x and Network Admission Control (NAC) ensure users are able to access appropriate resources. Path isolation technologies provide a means for traffic isolation. These include Generic Route Encapsulation (GRE), Virtual Route Forwarding (VRF) and Multiprotocol Label Switching (MPLS). Additionally, service modules such as the Application Control Engine (ACE) for the Catalyst 6500 can be virtualized to offer up to 256 different instances.

Cisco Catalyst Family Feature Comparison

Intelligent Switching for the Evolving Network

Modular Switches		
Model/Series	Catalyst 6500	Catalyst 4500
LAN Switching Features		
Connectivity and Filtering		
EtherChannel®/802.3ad	.	.
Jumbo Frames—GbE on Copper	.	Supported*
Jumbo Frames—GbE on Fiber	.	Supported*
Broadcast Suppression	.	.
Multicast Suppression	.	.
Unicast Flood Suppression	.	.
Flexible Packet Matching	.	.
Layer 2		
ISL/802.1Q	.	.
Private VLAN Edge	.	.
Private VLAN	.	.
Voice VLAN	.	.
VLAN Trunking Protocol (VTP)	.	.
GVRP	.	.
GARP	.	.
URT/VMPS	.	.
VTP v3	.	.
VTP Bomb Protection	.	.
VMPS Server	.	.
Number of Active VLANs	4096	4096
Number of VLAN IDs	4096	4096
Layer 3		
H/W-based MPLS/EoMPLS	.	.
EIGRP	.	.
EIGRP Stub	.	.
VPLS/H-VPLS	.	.
MPLS L3 VPNs	.	.
MPLS Traffic Engineering (TE)	.	.
OSPF	.	.

Fixed-Configuration Switches			
Catalyst 4900	Catalyst 3750-E	Catalyst 3750	Catalyst 3650-E
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4096	1005	1005	1005
4096	4096	4096	4096
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.	IP Services	IP Services	IP Services
.	IP Base	IP Base	IP Base
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.	.	.	.
.	IP Services	IP Services	IP Services

*The following Catalyst 4500 ports and modules support jumbo frames: **All ports:** Supervisor uplinks, WS-X4306-GB, WS-X4506-GB-T, WS-X4648-RJ45V-E, WS-X4648-RJ45V+E, WS-X4606-X2-E, and WS-X4624-SFP-E
Specific Ports: WS-X4232-GB-RJ: ports 1-2, WS-X4418-GB: ports 1-2, WS-X4412-2GB-TX: ports 13-14.

Cisco Catalyst Family Feature Comparison (continued)

Modular Switches

Model/Series	Catalyst 6500	Catalyst 4500
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LAN Switching Features (continued)

Layer 3 (continued)

BGP	.	.
Equal Cost Load Balancing	.	.
RIP, RIPv2	.	.
Static Routes	.	.
IS-IS	.	.
H/W-based IPv6 Routing	.	.
H/W-based Policy Routing IPv4	.	.
H/W-based Policy Routing IPv6	.	.
Multiprotocol Routing (IPX, AppleTalk)	.	.
Cisco Express Forwarding (CEF)	.	.
H/W FIB Entries	Up to 1,000,000	Up to 256,000
VRF Lite	IP Services	Enhanced Layer 3

Integrated Security

Access Control Lists

Reflexive ACL	.	.
Port ACL	.	.
Time-based ACL	.	.
Router ACL	.	.
VLAN ACL	.	.
VACL with Redirect/Capture/Logging of Denied Traffic	.	.
Context-based Access Control	.	.
H/W-based Access Control Entry (ACE) Counters	.	.
Order-dependent ACL Merge	.	.
Dedicated Hardware Resources for Security ACLs	.	.
ACL Scalability (ACE entries)	32,000	Sup-E-128K ACEs

Attack Mitigation

Flexible Packet Matching	.	.
Control Plane Policing (Multiple CPU Rate Limiters)	.	.
IP Source Guard	.	.

Fixed-Configuration Switches

Catalyst 4900	Catalyst 3750-E	Catalyst 3750	Catalyst 3650-E
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LAN Switching Features (continued)

Layer 3 (continued)

BGP	IP Services	IP Services	IP Services
Equal Cost Load Balancing	.	.	.
RIP, RIPv2	.	.	.
Static Routes	.	.	.
IS-IS	.	.	.
H/W-based IPv6 Routing	.	.	.
H/W-based Policy Routing IPv4	.	.	.
H/W-based Policy Routing IPv6	.	.	.
Multiprotocol Routing (IPX, AppleTalk)	.	.	.
Cisco Express Forwarding (CEF)	.	.	.
H/W FIB Entries	Up to 200,000	Up to 20,000	Up to 20,000
VRF Lite	IP Services	IP Services	IP Services

Integrated Security

Access Control Lists

Reflexive ACL	.	.	.
Port ACL	.	.	.
Time-based ACL	.	.	.
Router ACL	.	.	.
VLAN ACL	.	.	.
VACL with Redirect/Capture/Logging of Denied Traffic	*	Capture and Logging	Capture and Logging
Context-based Access Control	.	.	.
H/W-based Access Control Entry (ACE) Counters	.	.	.
Order-dependent ACL Merge	.	.	.
Dedicated Hardware Resources for Security ACLs	.	.	.
ACL Scalability (ACE entries)	32,000	2000	2000

Attack Mitigation

Flexible Packet Matching	.	.	.
Control Plane Policing (Multiple CPU Rate Limiters)	.	.	.
IP Source Guard	.	.	.

*As part of IPACL MAP but not for the entire VACL

Cisco Catalyst Family Feature Comparison (continued)

Modular Switches

Model/Series	Catalyst 6500	Catalyst 4500
Availability and Resiliency (continued)		
Network Protocols (continued)		
Digital Optical Monitoring	.	.
Flexlink	.	.
Link State Tracking		EEM or EOT
Delivery Optimization		
Stateful Application Intelligence		
Network-based Application Recognition	.	
Quality of Service		
Number of Queues per Port	Up to 8	Up to 8
Congestion Avoidance	.	.
L2–L3 Rewrite/Mapping	.	.
Ingress Queuing	.	
Ingress Strict Priority	.	
Egress Queuing	.	.
Egress Strict Priority	.	.
Traffic Classification	.	.
IP Service Level Agreement	.	.
Policers		
H/W-based Policing	.	.
Per-port Policers	.	.
Per-VLAN Policers	.	.
H/W-based Aggregate Policers	.	.
Hierarchical Policers	.	.
User-based (Source IP) Rate Limiting	.	.
Shaped Round Robin	.	
Multicast		
H/W-based IPv6 Multicast	.	.
H/W-based IPv4 Multicast	.	.
H/W-based Bidirectional PIM	.	.
Multicast Routing Manager	.	
Source Specific Multicast (SSM)	.	.

Fixed-Configuration Switches

Catalyst 4900	Catalyst 3750-E	Catalyst 3750	Catalyst 3650-E
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.	.	.	.
.	.	.	.
Up to 8	Up to 8	Up to 8	Up to 8
.	WTD	WTD	WTD
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N/A	.	.	.
N/A	.	.	.
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In Software	No PIM	No PIM	No PIM
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Cisco Catalyst Family Feature Comparison (continued)

Modular Switches

Model/Series	Catalyst 6500	Catalyst 4500
Delivery Optimization (continued)		
Multicast (continued)		
Multicast NSF/SSO	.	
PIM Sparse	.	.
PIM Dense	.	.
PIM Sparse/Dense	.	.
PIM Snooping	.	
PIM Accept Register—Rogue Multicast Server Protection	.	
IGMP v1/v2	.	.
IGMP v3	.	.
CGMP	.	.
RGMP	.	
DVMRP Interoperability	.	.
Number of Multicast Routes	32,000	32,000
IGMP Snooping	.	.
IGMP Querier	.	.
SSM Mapping	.	.
H/W-based Multicast Tunneling	.	
mVRF Lite	.	.
Multicast VPN (mVPN)	.	
Tunneling Protocols		
H/W-based GRE	.	In Software
H/W-based Multipoint GRE	.	.
H/W-based IPv4 in IPv6	.	In Software
H/W-based IP in IP	.	In Software
Enhanced Manageability		
Link Layer Discovery Protocol (LLDP)	.	.
Time Domain Reflectometry (TDR)	.	.
Time Domain Reflectometry (TDR) Interface 10/100/1000	.	.
Cisco Network Assistant (CNA)	.	.
Smartports	.	.

Fixed-Configuration Switches

	Catalyst 4900	Catalyst 3750-E	Catalyst 3750	Catalyst 3650-E

		.	.	.

	28,000	1000	1000	1000

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	.			
	In Software			
	.			
	In Software			
	In Software			
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		.	.	.

Cisco Catalyst Family Feature Comparison (continued)

Modular Switches

Model/Series	Catalyst 6500	Catalyst 4500
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Software Modularity

Subsystem in Service Software Upgrade (ISSU)	.	
Fault Containment	.	
Memory Protection	.	
Process Restartability	.	

Application, Security, and Management Modules

Virtualized Firewall Module	.	
Intrusion Detection and Prevention Module	.	
VPN: IPSec, SSL Module	.	
Anomaly Detection and Guard Module	.	
Network Analysis Module	.	
Communication Media Module	.	
Wireless LAN Service Module	.	
Content Switching and SSL Module	.	
Application-oriented Network Module	.	

IPT Solution

802.3af—15W on 48 Ports in a Module/ Fixed Switch	.	.
802.3af—7W on 48 Ports in a Module/ Fixed Switch	.	.
802.3af—15W on 24 Ports in a Module/ Fixed Switch	.	.
802.3af Modular PoE Daughter Card	.	
Subsystem In Service Software Upgrade (ISSU)	.	.
Fast Link Failure Detection (Bidirectional Forwarding Detection)	.	
Redundant Supervisors with Stateful Switchover	.	.
Redundant Power Supply	.	.
Redundant Power Circuit	.	.
Communication Media Module	.	
AutoQoS	.	.
Cisco Discovery Protocol (CDP)	.	.

Fixed-Configuration Switches

Catalyst 4900	Catalyst 3750-E	Catalyst 3750	Catalyst 3650-E
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Cisco Catalyst Family Feature Comparison (continued)

Modular Switches

Model/Series	Catalyst 6500	Catalyst 4500
IPT Solution (continued)		
Link Layer Discovery Protocol (LLDP)	.	.
Encapsulated RSPAN	.	.
IP Service Level Agreement	.	.
VoIP Quality Monitoring with Network Analysis Module	.	.
System Scalability		
Switching Fabric (Gbps)	32–720	64–320
Packets per Second (Mpps)	15–400	48–250
Modular Memory Upgrade	.	.

Fixed-Configuration Switches

Catalyst 4900	Catalyst 3750-E	Catalyst 3750	Catalyst 3650-E
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96–320	64	32	64
72–250	65–39	65–39	65–39
.	.	.	.

Cisco Catalyst Family Feature Comparison (continued)

Fixed-Configuration Switches

Model/Series	Catalyst 3560	Catalyst 2960
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Availability and Resiliency

Switch Redundancy

IOS Software Modularity		
Non-stop Forwarding/Stateful Switchover (NSF/SSO)		
NSF-aware	•	
Redundant Power Supplies	External only	External only
Redundant Fans		
Redundant Fan Trays		
Redundant Supervisors		
Generic Online Diagnostics (GOLD)	•	
Basic Support for GOLD Services	•	
Power Supply Failure Redundancy	•	•
Power Circuit Failure Redundancy		

Network Protocols

Unidirectional Link Detection (UDLD)	•	•
Gateway Load Balancing Protocol (GLBP)		
Hot Standby Routing Protocol (HSRP)	•	
Virtual Router Redundancy Protocol (VRRP)		
UplinkFast	•	•
BackBoneFast	•	•
RSTP (802.1w)	•	•
PortFast	•	•
Per VLAN STP (PVSTP)	•	•
Per VLAN RSTP (PVRSTP)	•	•
Multiple Instance STP (MISTP)	•	•
MSTP (802.1s)	•	•
STP Root Guard	•	•
BDPU Guard	•	•
Loop Guard	•	•
IP Event Dampening		
Bidirectional Forwarding Detection		
Digital Optical Monitoring		

Catalyst 2940	Catalyst Express
	External
	24, PC only
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•	•

Cisco Catalyst Family Feature Comparison (continued)

Fixed-Configuration Switches

Model/Series	Catalyst 3560	Catalyst 2960
System Scalability		
Switching Fabric (Gbps)	32-720	64-320
Packets per Second (Mpps)	15-400	48-250
Modular Memory Upgrade	.	.

Catalyst 2940	Catalyst Express
3.6	8.8-24
2.7	6.5-179

For more product information on Cisco Catalyst Switches, go to: <http://www.cisco.com/en/us/products/hw/switches/index.html>

Cisco Catalyst Switching Transition Guide

Intelligent Switching for the Evolving Network

Current Product	Recommended Product
Modular Switches: Cisco Catalyst 6500 Series Switches	
Chassis	
WS-C6503	WS-C6503-E WS-C6504-E
WS-C6506	WS-C6506-E
WS-C6509-NEB	WS-C6509-V-E
WS-C6509-NEB-FAN	WS-C6509-V-E-FAN
WS-6509-NEB-UPGRD=	WS-C6509-V-E
WS-C6006	WS-C6506-E
WS-C6006-1000AC=	WS-C6506-E + WS-CAC-3000W
WS-C6006-1300AC=	WS-C6506-E + WS-CAC-3000W
WS-C6009	WS-C6509-E
WS-C6009-1300AC=	WS-C6509-E + WS-CAC-3000W
WS-C6009-2500AC=	WS-C6509-E + WS-CAC-3000W
Power Supplies	
WS-CAC-4000W-US	WS-CAC-6000W
WS-CAC-4000W-INT	WS-CAC-6000W
WS-CAC-2500W	WS-CAC-3000W WS-CAC-6000W WS-CAC-8700W-E
WS-CAC-1300W	WS-CAC-2500W WS-CAC-3000W WS-CAC-6000W WS-CAC-8700W-E
WS-CAC-1000W	WS-CAC-3000W
PWR-950-AC	PWR-1400-AC PWR-1400-AC (for WS-C6503-E) PWR-2700-AC/4 (for WS-C6504-E)
PEM-15A-AC	PEM-20A-AC+ PEM-20A-AC+ (for 1400W Power Supply)

Current Product	Recommended Product
Modular Switches: Cisco Catalyst 6500 Series Switches (continued)	
Fan Trays	
FAN-MOD-3	WS-C6503-E-FAN (for WS-C6503-E Chassis) WS-C6503-E-FAN (for WS-C6503-E Chassis) FAN-MOD-4HS (for WS-C6504-E Chassis)
FAN-MOD-3HS	WS-C6503-E-FAN (for WS-C6503-E Chassis) FAN-MOD-4HS (for WS-C6504-E Chassis)
WS-C6K-6SLOT-FAN	WS-C6506-E-FAN (for WS-C6506-E Chassis)
WS-C6K-9SLOT-FAN	WS-C6509-E-FAN (for WS-C6509-E Chassis)
WS-C6K-13SLOT-FAN	WS-C6K-13SLT-FAN2
WS-C6K-6SLOT-FAN2	WS-C6506-E-FAN (for WS-C6506-E Chassis)
WS-C6K-9SLOT-FAN2	WS-C6509-E-FAN (for WS-C6509-E Chassis)
Service Modules	
WS-SVC-WLAN-1-K9	WS-SVC-WISM-1-K9
WS-X6502-FULL-CVR	No Replacement
Optical Modules	
WS-G6488	No Replacement
WS-G6483	No Replacement
Supervisors	
WS-F6K-GE48-AF=	WS-F6K-48-AF=
WS-F6K-VPWR-GE=	WS-F6K-48-AF= WS-X6148A-45AF WS-X6148A-GE-45AF
WS-X6148X2-45AF	WS-X6196-21AF
WS-X6148X2-RJ-45	WS-X6196-RJ-21
WS-X6516-GE-TX	WS-X6748-GE-TX

Cisco Catalyst Switching Transition Guide (continued)

Current Product	Recommended Product
Modular Switches: Cisco Catalyst 6500 Series Switches (continued)	
Supervisors (continued)	
WS-X6K-S2U-MSFC2	WS-SUP32-10GE-3B
	WS-SUP32-GE-3B
	VS-S720-10G-3C
	VS-S720-10G-3CXL
WS-X6K-S2-MSFC2	WS-SUP32-10GE-3B
	WS-SUP32-GE-3B
	VS-S720-10G-3C
	VS-S720-10G-3CXL
WS-X6K-S2-PFC2	WS-SUP32-10GE-3B
	WS-SUP32-GE-3B
	VS-S720-10G-3C
	VS-S720-10G-3CXL
WS-X6K-S1A-MSFC2	VS-S720-10G-3CXL
	VS-S720-10G-3C
WS-X6K-SUP1A-MSFC	VS-S720-10G-3CXL
	VS-S720-10G-3C
WS-X6K-SUP1A-PFC	VS-S720-10G-3CXL
	VS-S720-10G-3C
WS-X6K-SUP1A-2GE	VS-S720-10G-3CXL
	VS-S720-10G-3C
WS-X6K-SUP1-2GE	VS-S720-10G-3CXL
	VS-S720-10G-3C
Line Cards and Daughter Cards	
WS-F6K-GE48-AF=	WS-F6K-48-AF=
WS-F6K-VPWR-GE=	WS-F6K-48-AF=
WS-F6K-VPWR=	WS-X6148-21AF
	WS-X6148A-45AF
	WS-X6148A-GE-45AF
WS-X6148X2-45AF	WS-X6196-21AF
WS-X6148X2-RJ-45	WS-X6196-RJ-21
WS-X6516-GE-TX	WS-X6748-GE-TX

Current Product	Recommended Product
Modular Switches: Cisco Catalyst 6500 Series Switches (continued)	
Line Cards and Daughter Cards (continued)	
WS-X6548-RJ-21	WS-X6148-RJ-21
WS-X6548-RJ-45	WS-X6748-GE-TX
WS-X6548V-GE-TX	WS-X6548-GE-45AF
WS-X6816-GBIC	WS-X6724-SFP
	WS-X6748-SFP
WS-X6248A-TEL	WS-X6148-21AF
WS-X6316-GE-TX	WS-X6748-GE-TX
	WS-X6548-GE-TX
	WS-X6148-GE-TX
WS-X6348-RJ21V	WS-X6516-GE-TX
	WS-X6148-21AF
WS-X6348-RJ-45	WS-X6196-21AF
	WS-X6148A-RJ-45
	WS-X6148A-GE-TX
WS-X6348-RJ45V	WS-X6548-GE-TX
	WS-X6148A-45AF
WS-X6148-RJ45V	WS-X6148A-GE-45AF
	WS-X6148A-45AF
	WS-X6148A-GE-45AF
WS-X6416-GBIC	WS-X6516A-GBIC
	WS-X6724-SFP (Requires Catalyst 6500 Series Supervisor Engine 720)
WS-X6148-RJ-45	WS-X6148A-RJ-45
	WS-X6148A-GE-TX
WS-X6148-45AF	WS-X6148A-45AF
	WS-X6148A-GE-45AF
WS-X6148-GE-TX	WS-X6148A-GE-TX
WS-X6148V-GE-TX	WS-X6148A-GE-45AF
WS-X6148-GE-45AF	WS-X6148A-GE-45AF
WS-X6516-GBIC	WS-X6516A-GBIC
WS-X6148A-RJ-45	WS-X6148A-GE-TX
WS-X6148A-45AF	WS-X6148A-GE-45AF
WS-X6548-RJ-45	WS-X6148A-GE-45AF

Cisco Catalyst Switching Transition Guide (continued)

Current Product	Recommended Product
Modular Switches: Cisco Catalyst 6500 Series Switches (continued)	
Line Cards and Daughter Cards (continued)	
WS-C6500-SFM	VS-S720-10G-3CXL VS-S720-10G-3C
WS-X6500-SFM2	VS-S720-10G-3CXL VS-S720-10G-3C
WS-F6K-MSFC2=	VS-S720-10G-3CXL VS-S720-10G-3C
WS-X6502-10GE	WS-X6704-10GE
Modular Switches: Cisco Catalyst 4500 Series Switches	
Chassis	
WS-C4003	WS-C4503-E
WS-C4006	WS-C4506-E WS-C4507R-E WS-C4510R-E
Supervisors	
WS-X4013 (SUP II)	WS-X4013+ (SUP II+) WS- X4013+10GE (SUP II-Plus-10GE) WS-X45-SUP6L-E (SUP6L-E)
WS-X4014 (SUP III)	WS-X4515 (SUP IV) WS-X4516 (SUP V) WS-X4516-10GE (SUP V-10GE) WS-X45-SUP6-E (SUP6-E)
WS-X4032-L3	WS-X4515 (SUP IV) WS-X4516 (SUP V) WS-X4516-10GE (SUP V-10GE) WS-X45-SUP6-E (SUP6-E)
WS-X4012 (SUP I)	WS-X4013+ (SUP II+) WS-X4013+TS (SUP II Plus-TS)

Current Product	Recommended Product
Modular Switches: Cisco Catalyst 4500 Series Switches (continued)	
Supervisors (continued)	
WS-X4012 (SUP I)	WS- X4013+10GE (SUP II-Plus-10GE) WS-X46-SUP6L-E (SUP6L-E)
Line Cards and Daughter Cards	
WS-U4504-FX-MT	WS-X4232-GB-RJ
WS-U4504-FX-MT=	WS-X4232-GB-RJ=
WS-X4232-RJ-XX	WS-X4232-GB-RJ WS-X4648-RJ45V-E WS-X4648-RJ45V+E WS-X4606-X2-E
WS-X4232-RJ-XX=	WS-X4232-GB-RJ= WS-X4648-RJ45V-E WS-X4648-RJ45V+E WS-X4606-X2-E

Cisco Catalyst Switching Transition Guide (continued)

Current Product Chassis Recommended Product

Fixed-Configuration Switches: Cisco Catalyst 3750, 3500, 3500XL, and 2950 Series Switches

WS-C3750G-24TS-S	WS-C3750G-24-TS-S1U
	WS-C3750E-24TD-S
WS-C3750G-24TS-E	WS-C3750G-24-TS-E1U
	WS-C3750E-24TD-E
WS-C3750G-16TD-E	WS-C3750E-24TD-E
WS-C3750G-16TD-S	WS-C3750E-24TD-S
WS-C3550-12G	WS-C3750G-12S-S
	WS-C3750G-12S-E
WS-C3550-12T	WS-C3560G-24TS-S
	WS-C3560G-24TS-E
	WS-C3560E-24TD-S
	WS-C3560E-24TD-E
	WS-C3750G-24T-S
	WS-C3750G-24T-E
	WS-C3750G-24TS-S1U
	WS-C3750G-24TS-E1U
	WS-C3750E-24TD-S
	WS-C3750E-24TD-E
WS-C3550-24-SMI	WS-C3560-24TS-S
	WS-C3750-24TS-S
	WS-C3560E-24TD-S
	WS-C3750E-24TD-S
C3K-PWR-1150WAC=	3750-E/3560-E/RPS 2300 1150WAC Power Supply (Spare)
CAB-STACK-50CM=	Cisco StackWise 50CM Stacking Cable
CAB-STACK-1M	Cisco StackWise 1M Stacking Cable
CAB-STACK-1M=	Cisco StackWise 1M Stacking Cable
CAB-STACK-3M	Cisco StackWise 3M Stacking Cable
CAB-STACK-3M=	Cisco StackWise 3M Stacking Cable
CAB-STACK-50CM-NH	Cisco StackWise 50CM Non-Halogen Lead-free Stacking Cable

Current Product Chassis Recommended Product

Fixed-Configuration Switches: Cisco Catalyst 3750, 3500, 3500XL, and 2950 (continued)

WS-C3550-24-EMI	WS-C3560-24TS-E
	WS-C3750-24TS-E
	WS-C3560E-24TD-E
	WS-C3750E-24TD-E
WS-C3550-24-FX-SMI	WS-C3750-24FS-S
WS-C3550-48-SMI	WS-C3560-48TS-S
	WS-C3750-48TS-S
	WS-C3560E-48TD-S
	WS-C3750E-48TD-S
WS-C3550-48-EMI	WS-C3560-48TS-E
	WS-C3750-48TS-E
	WS-C3560E-48TD-E
	WS-C3750E-48TD-E
WS-C3550-24PWR-SMI	WS-C3560-24PS-S
	WS-C3560-48PS-S
	WS-C3750-24PS-S
	WS-C3750-48PS-S
	WS-C3560E-24PD-S
	WS-C3560E-48PD-S
WS-C3550-24PWR-EMI	WS-C3750E-24PD-S
	WS-C3750E-48PD-S
	WS-C3560-24PS-E
	WS-C3560-48PS-E
	WS-C3750-24PS-E
	WS-C3750-48PS-E
	WS-C3560E-24PD-E
	WS-C3560E-48PD-E
	WS-C3750E-24PD-E
	WS-C3750E-48PD-E

Cisco Catalyst Switching Transition Guide (continued)

Current Product Chassis Recommended Product

Fixed-Configuration Switches: Cisco Catalyst 3750, 3500, 3500XL, and 2950 (continued)

WS-3500XL-48	WS-C4948
WS-C3524-XL-EN	WS-C3560-24PS-S
	WS-C3750G-24T-E
	WS-C3750G-24TS-E
	WS-C3560E-24PD-S
	WS-C3750E-24TD-E
WS-C3548-XL-EN	WS-C3750G-24T-S
	WS-C3750-48PS-S
	WS-C3750E-24TD-S
	WS-C3750E-48PD-S
	WS-C4948
WS-C2950G-48-EI	WS-C3560-48PS-S
	WS-C3560-48TS-S
	WS-C2960-48TC-L
WS-C2950G-24-EI	WS-C3560-24PS-S
	WS-C3560-24TS-S
	WS-C2960-24TC-L
WS-C2950G-12-EI	WS-C3560-24PS-S
	WS-C3560-24TS-S
	WS-C2960-24TC-L
WS-C2950T-24	WS-C2960-24TT-L
	WS-C2960-48TT-L
WS-C2950-12	WS-C2960-24TT-L
	WS-C2960-24-S
WS-C2950-24	WS-C2960-24TT-L
	WS-C2960-24-S
WS-C2950C-24	WS-C2960-24TC-L
	WS-C2960-24TC-S
WS-C2950SX-24	WS-C2960-24TC-L
	WS-C2960-24TC-S
WS-C2950SX-48-SI	WS-C2960-48TC-L
	WS-C2960-48TC-S

Notes

Cisco Catalyst Modular Switches

The Cisco Catalyst 6500 and Catalyst 4500 Series modular switches provide customers with an intelligent platform for deploying numerous, concurrent intelligent services without degrading the overall performance of the switch. With a broad selection of line cards and power supplies, and their highly versatile architecture, modular switches deliver the highest levels of port density and flexibility, including Power over Ethernet (PoE) and Enhanced Power over Ethernet (ePoE) scalability to deploy new converged applications and extend investment protection well into the future. The modular architecture also provides scalable performance via a selection of supervisors which can be upgraded to enhance the performance and service features of the entire switch as needed.

To minimize costly user downtime, modular switches are optimized for high availability. Critical redundant hardware and software features deliver the highest resiliency for all places in the network. Another key advantage is the ease of use of modular switches. Modular switches have a single IOS image to manage, no matter how many line cards are inserted. This allows for simpler IOS configurations, updating, and management leading to a reduction in overall cost of ongoing operations.



Cisco Catalyst 6500 Series

The flagship Catalyst switching platform offers the highest levels of application intelligence, unified network services, integrated security, non-stop communications, operational manageability and virtualization for enterprises, medium-sized businesses, and service providers.

The Cisco Catalyst 6500 Series continues to be the industry's most innovative switching platform, delivering the highest levels of service. The feature-richness, density and scalability of this product line sets the standard for converged data, voice, and video networks. In addition, its flexibility enables deployments in wiring closet, campus distribution, core, data center, Internet access and WAN service aggregation, environments, and enables maximum operational efficiency and investment protection through hardware and software consistency.

The Cisco Catalyst 6500 Series offers integrated service modules that provide high-speed advanced services such as integrated wireless, firewalling, intrusion detection, application control, SSL termination, and network analysis services. With a choice of 3-, 4-, 6-, 9-, and 13-slot chassis, the Cisco Catalyst 6500 Series scales to support the highest port densities for Power over Ethernet (PoE) and Enhanced Power over Ethernet (ePoE), 10/100 Fast Ethernet, 10/100/1000 Gigabit Ethernet, 10 Gigabit Ethernet (10GbE) and DS0 to OC-192 WAN interfaces. The Cisco Catalyst 6500 Series switch also offers the investment protection of backwards compatibility, enabling new services and functions on older line cards by simply upgrading a supervisor to the latest generation.

Chassis Hardware Features

	WS-C6503-E	WS-C6504-E
Slots	3	4
Gigabit Ethernet GBIC/SFP Density	32/98	48/144
Two Chassis configured as a Virtual Switching System (SFP only)	196	288
10 GbE XENPAK/X2 Port Density	8/34	12/50
Two Chassis configured as a Virtual Switching System	68	100
10/100/1000 Density	97	145
Two Chassis configured as a Virtual Switching System	194	290
10/100 Density	192	288
100BASE-FX Density	96	144
Maximum Watt Power Consumption (Redundant Mode)		
AC Internal (Redundant Mode)	1400	2700
DC Internal (Redundant Mode)	950	2700
Maximum Number of Class 3 Devices (15.4W) Maximum Power Supplies		
AC Internal (Redundant Mode)	48	110
DC Internal (Redundant Mode)	31	110
Dimension (H x W x D) Inches	7 x 17.37 x 21.75	8.75 x 17.5 x 21.75
Dimension (H x W x D) Centimeters	17.8 x 44.1 x 55.2	22.2 x 44.5 x 55.2
Rack Unit (RU)	4	5
Unit Weight Pounds (Kilograms) (Chassis only)	33 (15.0)	40 (18.1)

WS-C6506-E	WS-C6509-E	WS-C6509-V-E	WS-C6513
6	9	9	13
80/242	128/386	128/384	192/410
484	772	768	480
20/82	32/130	32/130	48/82
164	260	260	164
241	385	385	577
482	770	770	482
480	768	768	1152
240	384	384	576
Maximum Watt Power Consumption (Redundant Mode)			
8700	8700	8700	6000
4000	4000	4000	4000
Maximum Number of Class 3 Devices (15.4W) Maximum Power Supplies			
284	288	215	281
173	184	206	176
19.2 x 17.5 x 18.2	24.5 x 17.5 x 18.2	33.3 x 17.2 x 18.1	33.3 x 17.3 x 18.1
48.8 x 44.5 x 46.0	62.2 x 44.5 x 46.0	84.6 x 43.7 x 46.0	84.6 x 43.7 x 46.0
12	15	21	20
50 (22.7)	60 (27.3)	55 (24.9)	98 (45.0)

Supervisor Engines Hardware Features

	Virtual Switching Supervisor 720-10G VS-S720-10G-3CXL VS-S720-10G-3C	SUP 720 WS-SUP720-3BXL WS-SUP720-3B
Chassis Supported	All	All
Bandwidth per Slot (Gbps)	40	40
Total Bandwidth (Gbps)	720	720
Packets per Second (Mpps)	450	400
MAC Addresses Supported	96K	64K
Routes Supported	1,000,000 (3CXL) 256,000 (3C)	1,000,000 (3BXL) 256,000 (3B)
Onboard Memory (DRAM)	1GB (SP), 1GB (RP)	Up to 1GB (SP), 1GB (RP)
Uplinks	2 x 10Gbe, 3 x GbE (2 SFP, 1 10/100/1000)	2 x GbE (SFP) or 1 x GbE (SFP) + 1 x GbE (10/100/1000)

Features

Catalyst 6500 Supervisor Common Features

- Supports next generation performance of 10Gigabit, Gigabit, Power over Ethernet and Enhanced Power over Ethernet interfaces
- Compatible with all three generations of Catalyst 6500 series interfaces and service modules
- Advanced automation with Smart CallHome and Embedded Event Manager
- User-based rate limiting enforcing up to 64 policy rates
- High performance features in hardware
- IPv4 and IPv6 forwarding
- Layer 2 and Layer 3 MPLS and EoMPLS
- Virtual Route Forwarding Lite (VRF-Lite)
- Generic Route Encapsulation (GRE)
- Advanced security features
- 802.1x and NAC
- Access Control Lists (ACLs)
- Virtual LANs (VLANs)
- Port Security
- CPU rate limiting
- Multi-path uRFP

SUP 32 WS-SUP32-10GE-3B WS-SUP32-GE-3B	SUP 32-PISA WS-SUP32-10GE-PISA WS-SUP32-GE-PISA
All	All
32 Gbps Shared	32 Gbps Shared
15	15
64K	64K
256,000	256,000
Up to GB	Up to GB
(-10GE) : 2 x 10GbE + 1 x 10/100/1000 (-GE) : 8 x 1GbE (SFP) + 1 x 10/100/1000	(-10GE) : 2 x 10GbE + 1 x 10/100/1000 (-GE) : 8 x 1GbE (SFP) + 1 x 10/100/1000

Features

Virtual Switching Supervisor 720-10G

- Scales to 1.4 Terabits with Virtual Switching System 1440
- Integrated 720 Gbps switch fabric
- Two 10 Gigabit and two Gigabit Ethernet uplinks
- 3CXL Policy Feature Card expands routing, MPLS, and Netflow capacity

Catalyst Supervisor Engine 720

- Optimized for maximum services scalability
- Integrated 720 Gbps switch fabric
- 3BXL Policy Feature Card expands routing, MPLS, and Netflow capacity

Supervisor Engine 32-PISA

- Integrated Programmable Intelligent Services Accelerator
- Multi-gigabit deep packet inspection
- Optimized for the access layer – common services with Supervisor Engine 720
- Available with two 10 Gigabit or eight Gigabit uplinks
- Shared 32 Gbps bus

Supervisor Engine 32

- Optimized for the access layer – common services with Supervisor Engine 720
- Available with two 10 Gigabit or eight Gigabit uplinks
- Shared 32 Gbps bus

Cisco Catalyst 6500 Series Spotlight

Virtual Switching System 1440

The key enabler of a VSS 1440 is the Virtual Switching Supervisor 720-10G. Any two Cisco Catalyst 6500 Series Switches with this supervisor engine can be pooled together into a VSS 1440*. The two switches are connected with 10 GbE links called Virtual Switch Links (VSLs). Once a VSS 1440 is created it acts as a single virtual Cisco Catalyst 6500 switch delivering the following benefits:

Operational Manageability:

Two Catalyst 6500s shares a single point of management, single gateway IP address, and single routing instance—eliminating the dependence on First Hop Redundancy Protocols (FHRP) and Spanning Tree Protocol

Non-Stop Communications:

Delivers deterministic, sub-200 millisecond layer 2 link recovery through inter-chassis stateful failovers and the predictable resilience of Etherchannel

Scales to 1.4 Tbps:

Scales system bandwidth capacity to 1.4 Tbps by activating all available bandwidth across redundant Catalyst 6500 switches and delivers up to 260 ports of 10 GbE per system

Programmable Intelligent Services Accelerator (PISA)

The Cisco Catalyst 6500 Supervisor Engine 32 Programmable Intelligent Services Accelerator (PISA) embeds multi-gigabit deep packet inspection capability into the Catalyst 6500 Series platform. This enables hardware acceleration of services and offers new levels of application intelligence, integrated security, and operational manageability for enterprise campus access and WAN routing.

Cisco IOS Software Modularity

The Cisco Catalyst 6500 Series with Cisco IOS Software Modularity boosts operational efficiency and minimizes downtime through evolutionary software infrastructure advancements. By enabling modular Cisco IOS subsystems to run as independent, self-healing processes, this innovation minimizes unplanned downtime through fault containment and stateful process restarts, simplifies software changes through subsystem In-Service Software Upgrades (ISSU), and enables process-level, automated policy control by integrating the Embedded Event Manager (EEM).

Maximum PoE Scalability

The Cisco Catalyst 6500 Series provides industry leading levels of power scalability (up to 420 Class 3 devices) needed to support high-density PoE deployments. It also offers Enhanced Power over Ethernet (ePoE) for devices that require more than 15.4 Watts per port. The enhanced 6- and 9-slot chassis (WS-C6506-E and WS-C6509-E models) are designed to scale beyond the current 8700W power supplies. Continuing this product line's tradition of unmatched investment protection, all existing supervisors, line cards, switch fabrics, and software releases are supported in the E series chassis.

Metro Ethernet 6500

The ME 6500 offers high services in a fixed 1.5 RU form factor. It is optimized for space constrained branch collapsed core/distribution GE LAN aggregation.

The Cisco ME 6524 Ethernet Switch delivers advanced Catalyst 6500 features and services such as IOS modularity, MPLS, QoS, Multicast, and IPv6 features in a small fixed form factor enabling service-rich Gigabit Ethernet LAN aggregation in branch deployments.

Product Overview

Product Number	Product Description
Catalyst 6500 Chassis - Top Sellers	
WS-C6503-E	6500 Enhanced 3-slot Chassis, 4-RU, No Power Supply, No Fan Tray
WS-C6504-E	6500 Enhanced 4-slot Chassis, 5-RU, No Power Supply, No Fan Tray
WS-C6506-E	6500 Enhanced 6-slot Chassis, 12-RU, No Power Supply, No Fan Tray
WS-C6509-E	6500 Enhanced 9-slot Chassis, 15-RU, No Power Supply, No Fan Tray
WS-C6509-V-E	6500 Enhanced 9-slot Chassis, 21-RU, No Power Supply, No Fan Tray
WS-C6513	6500 13-slot Chassis, 20-RU, No Power Supply, No Fan Tray
Catalyst 6500 Sup32 PISA-10GbE Bundles - Top Sellers	
WS-C6503E-PISA-10GE	6503E Chassis, WS-S32-PISA-10G-3B, Fan Tray (Requires Power Supply)
WS-C6504E-PISA-10GE	6504E Chassis, WS-S32-PISA-10G-3B, Fan Tray (Requires Power Supply)
WS-C6506E-PISA-10GE	6506E Chassis, WS-S32-PISA-10G-3B, Fan Tray (Requires Power Supply)
WS-C6509E-PISA-10GE	6509E Chassis, WS-S32-PISA-10G-3B, Fan Tray (Requires Power Supply)
WS-C6513-PISA-10GE	6513 Chassis, WS-S32-PISA-10G-3B, Fan Tray (Requires Power Supply)
Catalyst 6500 Sup32 PISA-GbE bundles - Top Sellers	
WS-C6503E-PISA-GE	6503E Chassis, WS-S32-PISA-GE-3B, Fan Tray (Requires Power Supply)
WS-C6504E-PISA-GE	6504E Chassis, WS-S32-PISA-GE-3B, Fan Tray (Requires Power Supply)
WS-C6506E-PISA-GE	6506E Chassis, WS-S32-PISA-GE-3B, Fan Tray (Requires Power Supply)
WS-C6509E-PISA-GE	6509E Chassis, WS-S32-PISA-GE-3B, Fan Tray (Requires Power Supply)
WS-C6513-PISA-GE	6513 Chassis, WS-S32-PISA-GE-3B, Fan Tray (Requires Power Supply)
Catalyst 6500 Sup32-GbE Bundles - Top Sellers	
WS-C6503E-S32-GE	6503E Chassis, WS-SUP32-GE-3B, Fan Tray (Requires Power Supply)
WS-C6504E-S32-GE	6504E Chassis, WS-SUP32-GE-3B, Fan Tray, (Requires Power Supply)
WS-C6506E-S32-GE	6506E Chassis, WS-SUP32-GE-3B, Fan Tray (Requires Power Supply)
WS-C6509E-S32-GE	6509E Chassis, WS-SUP32-GE-3B, Fan Tray (Requires Power Supply)
WS-C6513-S32-GE	6513 Chassis, WS-SUP32-GE-3B, Fan Tray (Requires Power Supply)
WS-C6506E-IPS10GK9	6506E Chassis, 4 x IDSM2, WS-SUP32-GE-3B, 2 10GbE XENPAKs, Power Supply
WS-C6506E-IPSF-K9	6506 Chassis, 4 x IDSM2, WS-SUP32-GE-3B, 8 Fiber SFP, Power Supply
Catalyst 6500 Sup32-10GbE Bundles - Top Sellers	
WS-C6503E-S32-10GE	6503E Chassis, WS-SUP32-10GE-3B, Fan Tray (Requires Power Supply)
WS-C6504E-S32-10GE	6504E Chassis, WS-SUP32-10GE-3B, Fan Tray (Requires Power Supply)
WS-C6506E-S32-10GE	6506E Chassis, WS-SUP32-10GE-3B, Fan Tray (Requires Power Supply)
WS-C6509E-S32-10GE	6509E Chassis, WS-SUP32-10GE-3B, Fan Tray (Requires Power Supply)
WS-C6513-S32-10GE	6513 Chassis, WS-SUP32-10GE-3B, Fan Tray (Requires Power Supply)

* See Virtual Switching System 1440 on the Catalyst 6500 Series White Paper for complete requirements.

Product Overview (continued)

Product Number	Product Description
Catalyst 6500 Advanced Technology Bundles - Top Sellers	
WS-C6504-E-VPN+K9	6504E IPSec VPN SPA Security System
WS-C6506-E-VPN+K9	6506E IPSec VPN SPA Security System
WS-C6509-E-VPN+K9	6509E IPSec VPN SPA Security System
WS-C6513-VPN+K9	6513 IPSec VPN SPA Security System
WS-C6503-E-FWM-K9	6503E Firewall Security System
WS-C6506-E-FWM-K9	6506E Firewall Security System
WS-C6509-E-FWM-K9	6509E Firewall Security System
WS-C6513-FWM-K9	6513 Firewall Security System
WS-C6504-E-ACE-K9	ACE 4G 6504 Bundle
WS-C6509-E-ACE-K9	ACE 8G 6509 Bundle
WS-C6504-E-WISM	6504-E WiSM Bundle (SUP720-3B, WiSM, Fan Tray, (2) Power Supply)
WS-C6509-E-WISM	6509-E WiSM Bundle (SUP720-3B, WiSM, Fan Tray, No Power Supply)
WS-C6503E-CSM	CSM, 6503, SUP720 Bundle
WS-C6503E-CSMS-K9	CSM-S, 6503, SUP720 Bundle
WS-C6509E-CSM	CSM, 6509, SUP720 Bundle
WS-C6509E-CSMS-K9	CSM-S, 6509, SUP720 Bundle
WS-C6513-CSM	CSM, 6513, SUP720 Bundle
WS-C6513-CSMS-K9	CSM-S, 6513, SUP720 Bundle
WS-SVC-SSL-CSM-K9=	6500 SSL and CSM Bundle
Catalyst 6500 AC Power Supplies - Top Sellers	
PWR-1400-AC	1400W AC Power Supply for 7603 and WS-C6503 Chassis
PEM-20A-AC+	Power Entry Module use w/1400W AC Power Supply for 7603/6503
PWR-2700-AC/4	2700W AC Power Supply for 7604/6504-E
WS-CAC-3000W	6500 3000W AC Power Supply
WS-CAC-6000W	6500 6000W AC Power Supply
Catalyst 6500 DC Power Supplies - Top Sellers	
PWR-950-DC	950W DC Power Supply for 7603/6503
PEM-DC/3	DC Power Entry Module for 7603/6503
PWR-2700-DC/4	2700W DC Power Supply for 7604/6504-E
WS-CDC-2500W	6000 2500W DC Power Supply
PWR-4000-DC	4000W DC PS for 7609-S/7609/13, 6509/13

Product Number	Product Description
Catalyst 6500 Supervisor Engines - Top Sellers	
WS-SUP32-PISA-10G-3B	6500 SUP32 with PISA Technology and 2 Ports 10GbE and PFC3B
WS-SUP32-PIDA-GE-3B	6500 SUP32 with PISA Technology and 8 GbE Uplinks and PFC3B
WS-SUP32-10GE-3B	6500 SUP32 with 2 Ports 10GbE and PFC3B
WS-SUP32-GE-3B	6500 SUP32 with 8 GbE Uplinks and PFC3B
VS-SUP720-10G-3CXL	6500 Virtually Switching Supervisor 720 with 10 GE Uplinks, MSFC3, PFC3CXL
VS-SUP720-10G-3CXL	6500 Virtually Switching Supervisor 720 with 10 GE Uplinks, MSFC3, PFC3C
WS-SUP720-3BXL	6500/7600 SUP720 Fabric MSFC3 PFC3BXL
WS-SUP720-3B	6500/7600 SUP720 Fabric MSFC3 PFC3B
Catalyst 6500 10 Gigabit Ethernet - Top Sellers	
WS-X6716-10G-3CXL	16-port 10 Gigabit Ethernet Module with DFC3CXL (Requires X2)
WS-X6716-10G-3C	16-port 10 Gigabit Ethernet Module with DFC3C (Requires X2)
WS-X6708-10G-3CXL	8-port 10 Gigabit Ethernet Module with DFC3CXL (Requires X2)
WS-X6708-10G-3C	8-port 10 Gigabit Ethernet Module with DFC3C (Requires X2)
WS-X6704-10GE	4-port 10 Gigabit Ethernet Module (Requires XENPAKs)
Catalyst 6500 Gigabit Ethernet - Top Sellers	
WS-X6408A-GBIC	6000 8-port Gigabit Ethernet Module, Enhanced QoS (Requires GBICs)
WS-X6516A-GBIC	6500 16-port Gigabit Ethernet Module, Fabric-enabled (Requires GBICs)
WS-X6724-SFP	6500 24-port Gigabit Ethernet Module, Fabric-enabled (Requires SFPs)
WS-X6748-SFP	6500 48-port Gigabit Ethernet Module, Fabric-enabled (Requires SFPs)
Catalyst 6500 10/100/1000 - Top Sellers	
WS-X6148A-GE-TX	6500 48-port 10/100/1000 w/Jumbo Frame, RJ-45
WS-X6148A-GE-45AF	6500 48-port PoE 802.3af 10/100/1000, w/Jumbo Frame
WS-X6548-GE-TX	6500 48-port Fabric-enabled 10/100/1000 Module
WS-X6548-GE-45AF	6500 48-port PoE 802.3af 10/100/1000 (RJ-45) CEF256 Card
WS-X6748-GE-TX	6500 48-port 10/100/1000 GbE Module, Fabric-enabled, RJ-45
Catalyst 6500 10/100 - Top Sellers	
WS-X6148A-RJ-45	6500 48-port 10/100 w/TDR, Upgradable - PoE 802.3af
WS-X6148A-45AF	6500 48-port PoE 802.3af 10/100 Line Card w/TDR
WS-X6148-RJ-21	6500 48-port 10/100 Upgradable to Voice, RJ-21
WS-X6148-21AF	6500 48-port PoE 802.3af 10/100, (RJ-21) Line Card
WS-X6196-RJ-21	6500 96-port 10/100 Upgradable - PoE 802.3af
WS-X6196-21AF	6500 96-port, PoE 802.3af 10/100 - RJ-21

Product Overview (continued)

Product Number	Product Description
Catalyst 6500 100 BASE-X - Top Sellers	
WS-X6148-FE-SFP	6500 48-port 100Base-X Module (Requires SFP)
Catalyst 6500 Policy Feature Cards/Distributed Forwarding Cards - Top Sellers	
WS-F6700-DFC3CXL	6500 Dist Fwd Card- 3CXL, for WS-X67xx
WS-F6700-DFC3C	6500 Dist Fwd Card for WS-X67xx Modules
WS-F6700-DFC3BXL	6500 Dist Fwd Card-3BXL, for WS-X67xx
WS-F6700-DFC3B	6500 Dist Fwd Card, 256K Routes for WS-X67xx
WS-F6K-DFC3BXL	6500 Dist Fwd Card-3BXL for 65xx, 6816 Modules
WS-F6K-DFC3B	6500 Dist Fwd Card-3B for 65xx, 6816 Modules
WS-F6K-PFC3BXL	SUP720 PFC-3BXL Plus 2x1Gig Memory
WS-F6K-PFC3B	SUP720 Policy Feature Card-3B
Catalyst 6500 Service Modules - Top Sellers	
ACE10-6500-K9	Application Control Engine Service Module
WS-SVC-FWM-1-K9	Firewall Blade for 7600/6500, VFW License Separate
WS-SVC-IDS2-BUN-K9	600M IDS-2 Module
7600-SSC-400	7600/6500 Services SPA Carrier Card
SPA-IPSEC-2G	7600/6500 IPSec VPN SPA - DES/3DES/AES
SPA-IPSEC-SSC400-1	7600/6500 IPSec VPN SPA Bundle 1 (System only)
SPA-IPSEC-SSC400-2	7600/6500 IPSec VPN SPA Bundle 2 (System only)
WS-SVC-ADM-1-K9	6500 Anomaly Detection Module
WS-SVC-AGM-1-K9	6500 Anomaly Guard Module
WS-X6066-SLB-S-K9	Content Switching Module with SSL Daughter Card
WS-X6066-SLB-APC	6000 Content Switching Module
WS-SVC-SSL-1-K9	SSL Module for 6500
WS-SVC-NAM-1	6500 Network Analysis Module-1
WS-SVC-NAM-2	6500 Network Analysis Module-2
WS-SVC-CMM	Communication Media Module
WS-SVC-CMM-6E1	6-port E1 Interface Port Adapter
WS-SVC-CMM-6T1	6-port T1 Interface Port Adapter
WS-SVC-CMM-BLANK	Communication Media Module Blank Panel Cover
WS-SVC-CMM-BLANK=	Communication Media Module Blank Panel Cover

Product Number	Product Description
Catalyst 6500 Service Modules - Top Sellers (continued)	
WS-SVC-CMM-ACT	Adhoc Conferencing and Transcoding PA
WS-SVC-CMM-24FXS	24-port FXS Interface Port Adapter
WS-SVC-CSG-1	Content Services Gateway
WS-SVC-MWAM-1	Multi-Processor WAN Application Module
WS-SVC-PSD-1	Persistent Storage Device
WS-SVC-WEBVPN-K9	6500 SSL VPN Module
Catalyst 6500 802.3af Upgrades - Top Sellers	
WS-F6K-48-AF=	C6500 802.3af PoE Daughter Card - 6 x 48 x-GbE-TX , 6148A-RJ-45
WS-F6K-FE48X2-AF=	6500 PoE 802.3af Voice Card (WS-X6148X2-RJ-45 and -RJ-21)
WS-X6148-45AF-UG=	6500 802.3af Upgrade for 6148-RJ-45 (Trade-in Order only)
WS-X6148-21AF-UG=	6500 - PoE 802.3af Upgrade, 6148-RJ-21
Catalyst 6500 FlexWAN/OSM - Top Sellers	
WS-X6582-2PA	7600/6500 Enhanced FlexWAN, Fabric-enabled
7600-SIP-200	7600 Series SPA Interface Processor-200
7600-SIP-400	7600 Series SPA Interface Processor-400
WS-C6503-E-FAN	6503-E Chassis Fan Tray
WS-C6506-E-FAN	6506-E Chassis Fan Tray
WS-C6509-E-FAN	6509-E Chassis Fan Tray
WS-C6509-V-E-FAN	Catalyst 6509-V-E Fan Tray
WS-C6K-13SLT-FAN2	High-speed Fan Tray for 6513 / 7613
FAN-C6524	Fan Tray for ME6524 Switch
FAN-MOD-4HS	High-speed Fan Module for 7604/6504-E
Catalyst 6500 Optics - Top Sellers	
GLC-FE-100LX	100BASE-LX SFP for FE port
GLC-FE-100BX-U	100BASE-BX10-U SFP
GLC-FE-100BX-D	100BASE-BX10-D SFP
GLC-FE-100EX	100BASE-EX SFP (40 km)
GLC-FE-100ZX	100BASE-ZX SFP (80 km)
GLC-LH-SM	GbE SFP, LC Connector LX/LH Transceiver
GLC-SX-MM	GbE SFP, LC Connector SX Transceiver
GLC-ZX-SM	1000BASE-ZX SFP
GLC-T	1000BASE-T SFP

Product Overview (continued)

Product Number	Product Description
Catalyst 6500 Optics - Top Sellers (continued)	
GLC-T24	24 GLC-T SFP
WS-G5484	1000BASE-SX Short Wavelength GBIC (Multimode only)
WS-G5486	1000BASE-LX/LH Long-haul GBIC (Single Mode or Multimode)
WS-G5487	1000BASE-ZX Extended-reach GBIC (Single Mode)
XENPAK-10GB-CX4	10GBASE-CX4 XENPAK Module
XENPAK-10GB-ER+	10GBASE-ER XENPAK Module with DOM Support
XENPAK-10GB-LR	10GBASE-LR XENPAK Module
XENPAK-10GB-LX4	10GBASE-LX4 XENPAK Module
XENPAK-10GB-SR	10GBASE-SR XENPAK Module
XENPAK-10GB-ZR	10GBASE-ZR XENPAK Module
XENPAK-10GB-LW	10GBASE-LW XENPAK Module
X2-10GB-SR	10GBASE-SR X2 Module
X2-10GB-LR	10GBASE-LR X2 Module
X2-10GB-ER	10GBASE-ER X2 Module
X2-10GB-LX4	10GBASE-LX4 X2 Module
X2-10GB-CX4	10GBASE-CX4 X2 Module

Catalyst 6500 Rack Mount Kits - Top Sellers

KIT-MNTG-CG-3=	Mounting Kit and Cable Guide For 7603/6503 Chassis
KIT-MNTG-CG-4=	Mounting Kit and Cable Guide For 7604/6504-E
WS-C6X06-RACK=	6x06 Rack Mount Kit and Cable Organizer, Spare
WS-C6X09-RACK=	6x09 Rack Mount Kit and Cable Organizer, Spare
WS-C6509-E-RACK=	6509-E Rack Mount Kit
WS-C6513-RACK=	6513 Rack Mount Kit and Cable Organizer, Spare
WS-C6597=	6506/9 (E and Non-E) 23in Center Rack Mount Kit
WS-6513-RACK-MNT=	23-inch Rack Mount Kit for 6513
KIT-MNTG-09=	Mounting Kit For 7609/6509-NEB-A Chassis
CABLETRAY-09=	Cable Tray Assembly for 7609/6509-NEB-A

Catalyst 6500 Accessories - Top Sellers

WS-F6K-48X2-SPLTR=	Spare Y-Type Splitter Bar for WS-X6148X2-RJ-45
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Product Number	Product Description
Catalyst 6500 Removable Storage - Top Sellers	
MEM-C6K-CPTFL128M	SUP720/SUP32 Compact Flash Memory 128MB
MEM-C6K-CPTFL256M	SUP720/SUP32 Compact Flash Memory 256MB
MEM-C6K-CPTFL512M	SUP720/SUP32 Compact Flash Memory 512MB

Catalyst 6500 FlexWAN - Top Sellers

WS-X6582-2PA	7600/6500 Enhanced FlexWAN, Fabric-enabled
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Cisco Service Modules

The modular design of the Cisco Catalyst 6500 Series allows organizations to scale their networks and adapt to changing needs, without having to redesign the network or add additional devices. Cisco integrated services modules enable network administrators to quickly and easily deploy the industry's most advanced, high-performance network services.

Wireless Services Module (WiSM)

This module enables scalable wireless LAN network deployments without requiring special client devices or changes to the underlying wireline infrastructure, providing an ideal solution for enterprises, mid-market businesses, universities, and service providers.

- Delivers centralized security policies, IPS, RF management, QoS, and Layer 3 fast secure roaming for WLAN deployments of all sizes.
- Provides automated recovery from failures of Cisco Aironet® lightweight access points, Cisco WiSMs, and Cisco Catalyst 6500 Series Supervisor Engine 720, maximizing the availability of the wireless network.
- Creates an intelligent RF control plane for self-configuration, self-healing, and self-optimization.

- Deploys without manually configuring access points or modifying existing network infrastructures.
- Adapts to changing corporate security needs with flexible policies and features, including integrated wireless intrusion protection to ensure the integrity of sensitive data.
- Allows user to roam between access points and across bridged and routed subnets without requiring changes to the underlying infrastructure.
- Enables better visibility and control of the air space, reducing operational costs.

Communication Media Module (CMM)

This module provides high-performance and high-density voice over IP (VoIP) gateways and media services, allowing organizations to connect their existing time-division multiplexing (TDM) network to their IP communications network, provide connectivity to the public switched telephone network (PSTN), and enable conferencing, transcoding, and media termination services for their IP Communication networks.

- Supports four port adapters in a single line card, including 6-port T1, 6-port E1, 24-port foreign-exchange-station (FXS), and 128-port conferencing and transcoding.
- Integration of VoIP gateways, analog, and digital, and conferencing and transcoding in a single

module saves space and allows for remote management along with the other Catalyst 6500 modules.

- Field-upgradable components allow customers to easily add, replace, or change interface port adapters without upgrading or replacing the entire module.
- Hot-swappable design allows hardware maintenance with little or no service interruption, since only the calls on the card being removed or replaced are affected.
- Cisco AVVID design lends itself to the robust, fault-tolerant architecture of clustered Cisco CallManagers.

Applications Control Engine Module

This module is Cisco's next-generation application delivery solution, providing the industry's highest throughput (up to 16 Gigabits per second), rich multilayer security, and unique virtual partitioning capabilities. The ACE multiservice module offers many new capabilities, including hundreds of virtual partitions, per-partition resource allocation, role-based access control, and an XML management API.

This module is Cisco's next-generation application delivery solution, providing the industry's highest throughput (up to 16 Gigabits per second), rich multilayer security, and unique virtual partitioning capabilities. The ACE multiservice module offers many new capabilities, including hundreds of virtual partitions, per-partition resource allocation, role-based access control, and an XML management API.

- Partitions network up to 250 logical devices that can be managed and operated separately.

Role-based access control capabilities enable IT to delegate management tasks to distributed IT teams, guarantee resource levels for each logical partition, and apply desired functions to each partition separately.

- Allows IT to control the infrastructure centrally while delegating application administration to separate operational teams. Also simplifies application infrastructures, shortens the workflow necessary to bring applications and business services online, and shortens time-to-deployment of applications.
- Also consolidates functionality such as server load balancing and off-load application acceleration, and application-layer security.
- Supports 4, 8, or 16 Gbps of data throughput and up to 345,000 sustained connection setups per second. Several ACE modules can be deployed in a Catalyst 6500 chassis for even higher throughput.

Content Switching Module

This module adds advanced, high-performance Layer 4–7 content switching and load balancing to existing Layer 2 and 3 features of the Catalyst 6500 switches, reducing application response times, optimizing service delivery, increasing application time, and increasing service scalability for servers, firewalls, VPN devices, SSL termination devices, and caches.

- Supports a wide range of common IP protocols, including TCP, User Datagram Protocol (UDP), and higher-level protocols, including Hypertext Transfer Protocol (HTTP), File Transfer Protocol (FTP), Telnet, Domain Name System (DNS), Real-Time Streaming Protocol (RTSP), and Simple Mail Transfer Protocol (SMTP).

- Reduces the cost and complexity of deploying content switching services by allowing for integration into existing infrastructure.
- Fault-tolerant configurations to provide improved application uptime, utilizing both connection and sticky state redundancy for seamless failover.
- Ability to integrate content switching services into an existing infrastructure minimizes the time and resources required for deployment.
- High-density, scalable platform with proven reliability offers unparalleled investment protection.

Content Switching Module with SSL

This module combines advanced Layer 4–7 content switching capabilities with Secure Sockets Layer acceleration, freeing backend servers from the CPU-intensive task of processing SSL transactions.

- High-speed content switching provides load balancing, increases performance, ensures connection persistence, and helps maximize uptime for application and Web servers, caches, firewalls, and other devices.
- End-to-end encryption with intelligent load balancing ensures information on the network never appears as clear text.

- Reduces the number of SSL devices needed and reduces the number of certificates that a site requires to purchase and manage, lowering both capital and operating expenses.
- Combines content switching and SSL acceleration in a single chassis slot, freeing up space for other integrated services.

Cisco Security Service Modules

Cisco Catalyst 6500 Series switches support a variety of high-performance security modules that protect networks from the full range of threats, while also simplifying management and reducing overhead by consolidating security services into the switching chassis.

Traffic Anomaly Detector Services Module

This module helps large organizations protect against distributed denial-of-service (DDoS) or other cyber attacks, enabling users to quickly initiate mitigation services and block the attack before business is adversely affected. It utilizes the latest behavioral analysis and attack recognition technology to proactively detect and identify all types of cyber assaults.

- Monitors and processes attack traffic at full Gigabit line rates, delivering a high-performance solution that detects DDoS attacks without consuming valuable switch or router resources.
- Identifies and blocks all types and sizes of assaults, including those launched by hundreds of thousands of distributed zombie hosts, providing complete protection against the widest range of attacks.

- Scales through clustering in a single chassis to support multi-gigabit performance, providing maximum protection for the largest enterprise and service provider environments or for individual vulnerable zones.
- Automatic learning builds baseline profiles of normal operating conditions, enabling rapid identification of anomalous or unusual activity that indicates an attack.
- Supports real-time monitoring of individual devices and protected zones with web-based graphical manager, as well as historical attack-level reports showing specific attack types seen and associated statistics.

Anomaly Guard Services Module

This module mitigates DDoS and other cyber attacks. It effectively stops the DDoS attack while allowing legitimate traffic to continue to its destination, thereby maintaining continuous business operations.

- Monitors and processes attack traffic at full Gigabit line rates, delivering a high-performance solution that detects DDoS attacks without consuming valuable switch or router resources.
- Multi-verification process (MVP) architecture utilizes advanced anomaly recognition, source verification and anti-spoofing technologies to identify and block individual attack flows without affecting legitimate transactions.

- Dynamic diversion redirects and cleans only traffic destined for targeted devices, allowing unaffected traffic to flow freely and ensuring business continuity.
- Automatic learning builds baseline profiles of normal operating conditions, enabling rapid identification of anomalous or unusual activity that indicates an attack.
- Identifies and blocks all types and sizes of assaults, including those launched by hundreds of thousands of distributed zombie hosts, providing complete protection against the widest range of attacks.

Intrusion Detection Services Module (IDSM-2)

This module helps detect, classify, and stop threats including worms, spyware/adware, network viruses, and application abuse. The Cisco IDSM-2 combines inline prevention services with innovative technologies that improve accuracy, allowing you to stop more threats without dropping legitimate network traffic.

- Accurate inline prevention technologies offer intelligent, automated, contextual analysis of your data and help ensure you are getting the most out of your intrusion prevention solution.
- Offers 600 Mbps performance per module, providing the high bandwidth detection capabilities required for larger networks.

- Multivector threat identification protects your network from policy violations, vulnerability exploitations, and anomalous activity through detailed inspection of traffic in Layers 2–7.
- Unique network collaboration enhances scalability and resiliency through network collaboration, including efficient traffic capture techniques, load-balancing capabilities, and visibility into encrypted traffic.

IPSec VPN Shared Port Adapter

This module delivers scalable and cost-effective VPN performance with Data Encryption Standard (DES), Triple Data Encryption Standard (3DES), plus next-generation Advanced Encryption Standard (AES) technology, including all key sizes (128-, 192-, and 256-bit keys) for ultimate in IPSec VPN security and interoperability.

- Provides up to 2.5 Gbps of AES and 3DES IPSec throughput with large packets and 1.6 Gbps with Internet mix (IMIX) traffic.

- Up to 10 Cisco IPSec VPN SPAs can be installed in a system, scaling to 25 Gbps of total throughput for wire-speed security transport for native 10 Gigabit Ethernet (10GbE) interfaces.
- Using the Cisco Services SPA Carrier-400, each slot of the Cisco Catalyst 6500 supports up to two IPSec VPN SPAs, increasing total performance per slot.

Network Analysis Module

This module provides traffic monitoring services for visibility into network and application usage, helping network managers troubleshoot delivery issues, improve the utilization of network resources, and ease the deployment of new network services. The NAM is available in two hardware versions, NAM-1 and NAM-2, to meet diverse network analysis needs in scalable switching environments.

- Includes an embedded, web-accessible Traffic Analyzer interface that presents both configuration menus and real-time and historical reports.

- Provides visibility into what applications are running on the network and how they're performing, tracking response times and identifying whether issues are server- or network-related.
- Offers web-based captures and decodes for anytime, anywhere troubleshooting.
- Analyzes the performance of IP-based services, including VoIP video, and QoS.

SSL Services Module

This module offloads processor-intensive tasks related to securing traffic with Secure Sockets Layer (SSL), increases the number of secure connections supported by a web site, and reduces the operational complexity of high performance web server farms.

- Ensures high availability when installed in a redundant Cisco Catalyst 6500 configuration, maintaining SSL sessions if hardware failures occur.
- Simplifies security management while encrypting user data to the web servers, providing privacy, confidentiality, and authentication using a wide range of certificates, including Netscape and VeriSign.

- An integrated Content Switching Module or external load-balancing appliance can load balance secure HTTPS content requests to multiple Cisco SSL services modules, maximizing SSL termination performance and providing SSL scalability.
- Provides the best price/performance ratio of any SSL accelerator on the market. Cost of maintenance is included in the maintenance contract of the Cisco Catalyst chassis, providing cost savings on annual service contracts. And by offloading the processing-intensive SSL termination burden from the web servers, the SSL Service Module eliminates the need to purchase additional servers.

Firewall Services Module

This module delivers the fastest firewall data rates in the industry: 5 Gbps throughput, 100,000 CPS, and one million concurrent connections. Up to four modules can be installed in a single chassis, offering scalability to 20 Gbps per chassis. Based on Cisco PIX® Firewall technology, it provides large enterprises and service providers with unmatched security, reliability, and performance.

- Allows any port on Cisco Catalyst 6500 to operate as a firewall port and integrates firewall security inside the network infrastructure.
- Provides unsurpassed performance to meet future requirements, scaling to up to 20 Gbps per chassis without requiring a system overhaul.
- Offers the best price/performance ratio of any firewall, utilizing the familiar, time-tested Cisco PIX Operating System to reduce the cost of training, and integrating firewall services into the chassis to reduce management requirements.

- An intuitive graphical user interface (GUI) simplifies management and configuration, and it's supported by the Cisco management framework and by Cisco AVVID partners for configuration and monitoring.
- Virtualized FWSM delivers multiple firewalls on one physical hardware platform, allowing network administrators to configure, deploy, and manage functions as if they were separate devices, while reducing the cost and complexity of managing network infrastructure.

Notes



Cisco Catalyst 4500 Series

High performance midrange modular switches for unified communications designed for high resiliency and simplified operations for Enterprise access layer and mid-market collapsed Core and Distribution layer.

The Cisco Catalyst 4500 Series is a medium-density modular switch delivering robust intelligent services for unified communication deployments. The simple centralized architecture, media flexibility, and scalability of the Catalyst 4500 Series delivers maximum investment protection with backward and forward compatibility across several generations dating back to 1999, maximizing return on investment while minimizing recurring operational expenses.

The Catalyst 4500 Series extends intelligence, resiliency and operational simplicity to the network edge (wiring closet) with intelligent network services, including sophisticated quality of service (QoS), predictable performance, advanced security, up to 30 watts of PoE plus compatible and comprehensive management features. The Catalyst 4500 series delivers the highest levels of integrated resiliency in both hardware and software minimizing costly downtime for both planned and unplanned network outages helping maximizing workforce productivity.

The Catalyst 4500 Series includes four chassis: the Catalyst 4510R-E (10 slots), the Catalyst 4507R-E (seven slots), Catalyst 4506-E (six slots), and Catalyst 4503-E (three slots). A broad selection of supervisor engines meet the needs of networks of all sizes deliver up to 320 Gbps of Layer 2–4 switching. The series supports an extensive set of line cards, providing up to 384 10/100 or 10/100/1000 ports with integrated Power over Ethernet (PoE). The series also supports 10 Gigabit Ethernet (10GbE) uplink ports and line cards for high-density Gigabit Ethernet-to-the-desk as well as high bandwidth switch-to-switch campus connectivity.

Features

Supervisor 6-E

- Highest performance Layer 2/3/4 Supervisor
- Supports 24Gig per slot capacity
- IPv6 in hardware
- 2 10 GbE or 4 GE uplinks (via TwinGig Module)
- Maximum investment protection
- High-Performance, high density access layer
- Medium core/distribution

Supervisor V-10GE

- High performance Layer 2/3/4 switching
- 2-10GbE and 4GE uplinks
- Built-in Netflow feature
- High-performance, high density access layer
- Small Distribution/core

Supervisor V

- High-performance L2/3/4
- GbE uplinks
- Netflow card optional
- Access layer

Supervisor IV

- Entry level L2/3/4
- GbE uplinks
- Netflow card optional
- Access layer

Supervisor 6L-E

- Highest performance Layer 2 Supervisor
- Supports 24Gig per slot capacity
- IPv6 in hardware
- 2 10 GbE or 4 GE uplinks (via TwinGig Module)
- Maximum investment protection
- High-Performance, high density access layer

Supervisor II-Plus-10GE

- Highest performance L2
- Future proofing with 10GbE uplinks
- High-performance L2 access layer

Supervisor II-Plus

- High-performance L2
- GbE uplinks
- L2 access layer

Features (continued)

Supervisor II-Plus-TS

- Entry level, small business
- 12 10/100/1000 with PoE and 8 SFP ports
- Supported in 4503 chassis only

Cisco Catalyst 4500 Series Spotlight

Unified Communications

The Catalyst 4500 offers a broad selection of Classic and E-Series PoE line cards and power supplies for high density PoE applications. Support includes IEEE 802.3af Class 3 (15.4W) PoE devices and 20watts for 802.11n wireless access points. The E-Series is also the first switch in the industry to support up to 30 watts PoE for devices requiring high power.

To optimize traffic over a Unified network, the Catalyst 4500 offers extensive QoS features, including L2-L7 classification, policing, traffic shaping, and advanced congestion control with port level user configurable TX queues, ensuring timely delivery of real time voice video and data applications. The Catalyst 4500 offers predictable wire rate performance even with extensive QoS and security features enabled.

Resiliency

The Cisco Catalyst 4500 Series is optimized for high resiliency to minimize planned and unplanned user downtime. It supports redundancy in both hardware and software to deliver a highly available switch for unified networks. The Catalyst 4500 offers redundancy for all critical components in the switch including the supervisor, power supplies and fans, ensuring the highest levels of resiliency. Software features enable millisecond failover ensuring that connectivity is not lost including IP phone calls or live Video streams. In Service Software Upgrade (ISSU) allows customers to upgrade the entire IOS image without taking the switch down and seamless to users.

Scalability

With support for up to 384 10/100/1000 ports, and 30Watts of PoE plus compatible, the modular architecture of the Cisco Catalyst 4500 Series provides the scalability and flexibility to eliminate the need for multiplatform deployments and minimizes expenses. The Cisco Catalyst 4500 Series offers up to 320gig of capacity and 250 million packets per second (Mpps) wire-speed forwarding rate in hardware. Switching performance is independent of the number of route entries or advanced Layer 3 services enabled. This ensures exceptional performance for applications which are jitter and latency sensitive.

Investment Protection

The Catalyst 4500 Series offers unprecedented backward and forward compatibility delivering exceptional investment protection. The new 4500-E Series chassis supports all shipping classic supervisors, line cards and power supplies. The new Supervisor 6-E is also designed with backward compatibility to support classic line cards and the high performance E-Series line cards in the same chassis with each line card operating at it's maximum speed. This level of backward compatibility allows customer to reuse a significant portion of their current Catalyst 4500 investment while taking advantage of the added features of the E-Series.

Chassis Hardware Features		
	WS-C4503-E	WS-C4506-E
Slots	3	6
Redundant Supervisor Option	No	No
Gigabit Ethernet GBIC/SFP Density	104	240
10 GbE X2 Port Density	14	32
10/100/1000 Density	108	240
10/100 Density	108	240
100BASE-FX, LX-10, BX-D Density	96	240
Backplane Capacity	136 Gbps	280 Gbps
Maximum Watt Power Consumption (Redundant Mode)		
AC Internal (Redundant Mode)	4200	4200
AC External Power Shelf (N+1)	7500	7500
DC Internal (Redundant Mode)	7500	7500
Maximum Number of Class 3 Devices (15.4W) Maximum Power Supplies		
AC Internal (Redundant Mode)	108	240
AC External Power Shelf (N+1)	108	240
DC Internal (Redundant Mode)	108	240
Dimension (H x W x D) Inches	12.25 x 17.31 x 12.50	17.38 x 17.31 x 12.50
Dimension (H x W x D) Centimeters	31.12 x 43.97 x 31.70	44.13 x 43.97 x 31.70
Rack Unit (RU)	7	10
Unit Weight Pounds (Kilograms) (Chassis only)	32.25 (14.63)	40.5 (18.37)

	WS-C4507R-E	WS-C4510R-E
	7	10
	Yes	Yes
	240	384
	34	34
	240	384
	240	384
	240	384
	280 Gbps	320 Gbps
	4200	4200
	7500	7500
	7500	7500
	240	270
	240	364
	240	384
	19.19 x 17.31 x 12.50	24.35 x 17.31 x 12.50
	48.74 x 43.97 x 31.70	61.84 x 43.97 x 31.70
	11	14
	44.50 (20.19)	54.50 (24.73)

Hardware Features		
	WS-C4503	WS-C4506
Slots	3	6
Redundant Supervisor Option	No	No
Gigabit Ethernet GBIC/SFP Density	104	244
10 GbE X2 Port Density	2	2
10/100/1000 Density	108	240
10/100 Density	108	240
100BASE-FX, LX-10, BX-D Density	96	240
Backplane Capacity	64 Gbps	100 Gbps
Maximum Watt Power Consumption (Redundant Mode)		
AC Internal (Redundant Mode)	4200	4200
AC External Power Shelf (N+1)	7500	7500
DC Internal (Redundant Mode)	7500	7500
Maximum Number of Class 3 Devices (15.4W) Maximum Power Supplies		
AC Internal (Redundant Mode)	108	240
AC External Power Shelf (N+1)	108	240
DC Internal (Redundant Mode)	108	240
Dimension (H x W x D) Inches	12.25 x 17.31 x 12.50	17.38 x 17.31 x 12.50
Dimension (H x W x D) Centimeters	31.12 x 43.97 x 31.70	44.13 x 43.97 x 31.70
Rack Unit (RU)	7	10
Unit Weight Pounds (Kilograms) (Chassis only)	31.25 (14.18)	40.5 (18.37)

Hardware Features		
	WS-C4507R	WS-C4510R
Slots	7	10
Redundant Supervisor Option	Yes	Yes
Gigabit Ethernet GBIC/SFP Density	248	392
10 GbE X2 Port Density	2	2
10/100/1000 Density	240	384
10/100 Density	240	384
100BASE-FX, LX-10, BX-D Density	240	384
Backplane Capacity	100 Gbps	136 Gbps
Maximum Watt Power Consumption (Redundant Mode)		
AC Internal (Redundant Mode)	4200	4200
AC External Power Shelf (N+1)	7500	7500
DC Internal (Redundant Mode)	7500	7500
Maximum Number of Class 3 Devices (15.4W) Maximum Power Supplies		
AC Internal (Redundant Mode)	240	270
AC External Power Shelf (N+1)	240	364
DC Internal (Redundant Mode)	240	384
Dimension (H x W x D) Inches	19.19 x 17.31 x 12.50	24.35 x 17.31 x 12.50
Dimension (H x W x D) Centimeters	48.74 x 43.97 x 31.70	61.84 x 43.97 x 31.70
Rack Unit (RU)	11	14
Unit Weight Pounds (Kilograms) (Chassis only)	44.25 (20.07)	51.50 (23.36)

Cisco Catalyst 4500 Series: Supervisor Engines

Hardware Features	SUP 6-E WS-X45-SUP6-E	SUP V-10GbE WS-X4516-10GE	SUP V WS-X4516
Chassis Supported	All	All	All
Enhanced Layer 3 Option	Yes	Yes	Yes
Total Bandwidth (Gbps)	320	136	96
Packets per Second (Mpps)	250	102	72
Uplinks	2x10GbE or 4GbE (TwinGig)	2 x 10GbE + 4GbE	2GbE
Line Card support (E-Series/Classic)	E-Series/Classic	Classic	Classic
CPU MHz	1300	800	400
NetFlow	No	Included	Option
Onboard Memory (DRAM)	512MB	512MB	512MB

SUP IV WS-X4515	SUP6L-E WS-X45-SUP6L-E	SUP II Plus-10GbE WS-X4013+10GE	SUP II-Plus WS-X4013+	SUP II-Plus-TS WS-X4013+TS
4503, 4506, 4507R, 4503-E, 4506-E, 4507R-E	4503, 4506, 4507R, 4503-E, 4506-E, 4507R-E	4507R, 4506, 4503, 4503-E, 4506-E, 4507R-E	4503, 4506, 4507R, 4503-E, 4506-E, 4507R-E	4503, 4503-E
Yes	EIGRP Stub	EIGRP Stub	EIGRP Stub	EIGRP Stub
64	280	108	64	64
48	225	81	48	48
2GbE	2x10GbE or 4GbE (TwinGig)	2 x 10GbE + 4GbE	2GbE	12 10/100/1000 PoE + 8 SFP
Classic	Classic	Classic	Classic	Classic
333	1300	667	266	266
Option	No	No	No	No
512MB	512MB	256MB (upgradable up to 512MB)	256MB	256MB

Product Overview

Product Number	Product Description
Catalyst 4500 E-Series: Chassis	
WS-C4503-E	Cat4500 E-Series 3-slot Chassis, Fan, No Power Supply
WS-C4506-E	Cat4500 E-Series 6-slot Chassis, Fan, No Power Supply
WS-C4507R-E	Cat4500 E-Series 7-slot Chassis, Fan, No Power Supply, Red Sup Capable
WS-C4510R-E	Cat4500 E-Series 10-slot Chassis, Fan, No Power Supply, Red Sup Capable
WS-C4503-E-S2+48	Cat4503-E Data Bundle, 1 x 1000AC, 1 x S2+, 1 x WS-X4148-RJ
WS-C4503-E-S2+48V	Cat4503-E PoE Bundle, 1 x 1300AC, 1 x S2+1 x WS-X4248-RJ45V
WS-C4507R-E-S2+96	Cat4507R-E Data Bundle, 1x 1000AC, 1 x S2+, 2 x WS-X4148-RJ
WS-C4507R-E-S2+96V	Cat4507R-E PoE Bundle, 1 x 2800AC, 1 x S2+, 2xWS-X4248-RJ45V
Catalyst 4500: Chassis	
WS-C4510R	4500 10-slot Chassis, Fan, No Power Supply, Red Sup Capable
WS-C4507R	4500 7-slot Chassis (7-slot), Fan, No Power Supply, Red Sup Capable
WS-C4506	4500 6-slot Chassis (6-slot), Fan, No Power Supply
WS-C4503	4500 3-slot Chassis (3-slot), Fan, No Power Supply
WS-C4506-S2+96	4506 Bundle, 1x 1000AC, 1 x S2 +, 2 x WS-X4148-RJ
WS-C4506-S4-AP25	4506 Bundle, 1x 1000AC, 1 x S4, 1 x WS-X4306-GB1x4402-25
WS-C4506-S4-AP50	4506 Bundle, 1x 1000AC, 1 x S4, 1 x WS-X4306-GB, 1x4402-50
Catalyst 4500 PoE Enabled Power Supplies	
PWR-C45-4200ACV	4500 4200W AC Dual Input Power Supply (Data + PoE)
PWR-C45-4200ACV/2	4500 4200W AC Dual Input Power Supply (Data + PoE)
PWR-C45-4200ACV=	4500 4200W AC Dual Input Power Supply (Data + PoE)
PWR-C45-2800ACV	4500 2800W AC Power Supply (Data and PoE)
PWR-C45-2800ACV=	4500 2800W AC Power Supply (Data and PoE)
PWR-C45-2800ACV/2	4500 2800W AC Power Supply (Data and PoE)
PWR-C45-1300ACV	4500 1300W AC Power Supply (Data and PoE)
PWR-C45-1300ACV/2	4500 1300W AC Power Supply (Data and PoE)
PWR-C45-1300ACV=	4500 1300W AC Power Supply (Data and PoE)
PWR-C45-1400DC-P	4500 1400W DC Power Supply w/Int PEM
PWR-C45-1400DC-P=	4500 1400W DC Power Supply w/Int PEM (Spare)
PWR-C45-1400DC-P/2	4500 1400W DC Power Supply Redundant w/Int PEM
WS-P4502-1PSU	4500 Aux. Power Shelf (2-slot), Includes 1 PWR-4502
PWR-4502	4500 Aux. Power Shelf Redundant Power Supply

Product Number	Product Description
Catalyst 4500 Non-PoE Power Supplies	
PWR-C45-1400AC	4500 1400W AC Power Supply (Data only)
PWR-C45-1400AC/2	4500 1400W AC Power Supply Redundant (Data only)
PWR-C45-1400AC=	4500 1400W AC Power Supply (Data only) Spare
PWR-C45-1000AC	4500 1000W AC Power Supply (Data only)
PWR-C45-1000AC=	4500 1000W AC Power Supply (Data only) Spare
PWR-C45-1000AC/2	4500 1000W AC Power Supply Redundant (Data only)
PWR-C45-1400DC	4500 1400W DC Triple Input SP Power Supply (Data only)
PWR-C45-1400DC=	4500 1400W DC Triple Input SP Power Supply (Data only)
PWR-C45-1400DC/2	4500 1400W DC Triple Input SP Power Supply (Data only)
Catalyst 4500 E-Series Supervisor Engines	
WS-X45-SUP6-E	Catalyst 4500 E-Series Sup 6-E, 2x10GE(X2) w/Twin Gig
WS-X45-SUP6-E/2	Catalyst 4500R E-Series Sup 6-E, 2x10GE(X2) w/Twin Gig
WS-X45-SUP6-E=	Catalyst 4500 E-Series Sup 6-E, 2x10GE(X2) w/Twin Gig
WS-X45-SUP6L-E	Catalyst 4500 E-Series Sup 6L-E, 2x10GE(X2) w/Twin Gig
WS-X45-SUP6L-E/2	Catalyst 4500 E-Series Sup 6L-E, 2x10GE(X2) w/Twin Gig
WS-X45-SUP6L-E=	Catalyst 4500 E-Series Sup 6L-E, 2x10GE(X2) w/Twin Gig
Catalyst 4500 Supervisor Engines	
WS-X4516-10GE	4500 Supervisor V-10GE, 2x10GbE (X2) and 4 x 1GbE (SFP)
WS-X4516-10GE=	4500 Supervisor V-10GE, 2x10GbE (X2) and 4 x 1GbE (SFP)
WS-X4516-10GE/2	4500R Supervisor V-10GE, 2x10GbE (X2) and 4 x 1GbE (SFP)
WS-X4516	4500 Supervisor V (2 GbE), Console (RJ-45)
WS-X4516=	4500 Supervisor V (2 GbE), Console (RJ-45) Spare
WS-X4516/2	4500R Redundant Supervisor V (2 GbE), Console (RJ-45)
WS-X4515	4500 Supervisor IV (2 GbE), Console (RJ-45)
WS-X4515=	4500 Supervisor IV, 2 GbE, Console (RJ-45) (Spare)
WS-X4515/2	4507R Redundant Supervisor IV, (2 GbE), Console (RJ-45)
WS-X4013+10GE	4500 Sup II+10GbE, 2x10GbE (X2) and 4 x 1GbE (SFP)
WS-X4013+10GE=	4500 Sup II+10GbE, 2x10GbE (X2) and 4 x 1GbE (SFP)
WS-X4013+10GE/2	4507R Sup II+10GbE, 2x10GbE (X2) and 4 x 1GbE (SFP)
WS-X4013+	4500 Supervisor II-Plus (IOS), 2 GbE, Console (RJ-45)
WS-X4013+=	4500 Supervisor II-Plus (IOS), 2 GbE, Console (RJ-45)
WS-X4013+/2	4507R Redundant Sup II-Plus, 2GbE, Console (RJ-45)
WS-X4013+TS	4503 SupII-Plus-TS, 12 10/100/1000 PoE + 8 SFP Slots
WS-X4013+TS=	4503 SupII-Plus-TS, 12 10/100/1000 PoE + 8 SFP Slots

Product Overview (continued)

Product Number	Product Description
Catalyst 4500 Supervisor Engines (continued)	
WS-X4516-10GE	4500 Supervisor V-10GE, 2x10GbE (X2) and 4 x 1GbE (SFP)
WS-X4516-10GE=	4500 Supervisor V-10GE, 2x10GbE (X2) and 4 x 1GbE (SFP)
Catalyst 4500 10/100 Line Cards	
WS-X4148-RJ	4500 10/100 Auto Module, 48-port (RJ-45)
WS-X4148-RJ=	4500 10/100 Auto Module, 48-port (RJ-45) (Spare)
WS-X4124-RJ45	4500 10/100 Module, 24-port (RJ45)
WS-X4124-RJ45=	4500 10/100 Module, 24-port (RJ45)
WS-X4148-RJ21	4500 10/100 Module, 48-port Telco (4 x RJ21)
WS-X4148-RJ21=	4500 10/100 Module, 48-port Telco (4 x RJ21) (Spare)
WS-X4148-RJ45V	EOS, See PB 4052] 4500 Prestd PoE 10/100 48-port RJ45
WS-X4248-RJ21V	4500 PoE 802.3af 10/100, 48-port (RJ21)
WS-X4248-RJ21V=	4500 PoE 802.3af 10/100, 48-port (RJ21)
WS-X4248-RJ45V	4500 PoE 802.3af 10/100, 48-port (RJ45)
WS-X4248-RJ45V=	4500 PoE 802.3af 10/100, 48-port (RJ45)
WS-X4224-RJ45V	4500 10/100 PoE 802.3af 24-port (RJ45)
WS-X4224-RJ45V=	4500 PoE 802.3af 10/100 24-port (RJ45)
WS-X4232-GB-RJ	4500 32-10/100 (RJ-45), 2 GbE (GBIC)
WS-X4232-GB-RJ=	4500 32-10/100 (RJ-45), 2 GbE (GBIC)
WS-X4232-RJ-XX	4500 10/100 Module, 32-port (RJ45)+Modular Uplinks
WS-X4232-RJ-XX=	4500 10/100 Module, 32-port (RJ45)+Modular Uplinks
Catalyst 4500 Line Cards	
WS-X4648-RJ45V-E	Catalyst 4500 E-Series 48-port PoE 802.3af 10/100/1000(RJ45)
WS-X4648-RJ45V-E=	Catalyst 4500 E-Series 48-port PoE 802.3af 10/100/1000(RJ45)
WS-X4624-SFP-E=	Catalyst 4500 E-Series 24-port GE (SFP)
WS-X4606-X2-E	Catalyst 4500 E-Series 6-port 10GbE (X2)
WS-X4606-X2-E=	Catalyst 4500 E-Series 6-port 10GbE (X2)
WS-X4648-RJ45V+E	Catalyst 4500 E-Series 48-port Premium PoE 10/100/1000
Catalyst 4500 10/100/1000 Line Cards	
WS-X4548-GB-RJ45	4500 Enhanced 48-port 10/100/1000 Base-T (RJ-45)
WS-X4548-GB-RJ45=	4500 Enhanced 48-port 10/100/1000 Base-T (RJ-45)
WS-X4548-GB-RJ45V	4500 PoE 802.3af 10/100/1000, 48-port (RJ45)
WS-X4548-GB-RJ45V=	4500 PoE 802.3af 10/100/1000, 48-port (RJ45)
WS-X4524-GB-RJ45V	4500 PoE 802.3af 10/ 100/1000 24-port (RJ45)

Product Number	Product Description
Catalyst 4500 10/100/1000 Line Cards (continued)	
WS-X4524-GB-RJ45V=	4500 PoE 802.3af 10/100/1000 24-port (RJ45)
WS-X4506-GB-T	4500 6-port 10/100/1000 PoE or SFP (Optional)
WS-X4506-GB-T=	4500 6-port 10/100/1000 PoE or SFP (Optional)
WS-X4448-GB-RJ45	4500 48-port 10/100/1000 Module (RJ45)
WS-X4448-GB-RJ45=	4500 48-port 10/100/1000 Module (RJ45)
WS-X4424-GB-RJ45	4500 24-port 10/100/1000 Module (RJ45)
WS-X4424-GB-RJ45=	4500 24-port 10/100/1000 Module (RJ45) (Spare)
Catalyst 4500 100 Base-X FE Line Cards	
WS-X4248-FE-SFP	4500 48-port 100BASE-X (SFPs Optional)
WS-X4248-FE-SFP=	4500 48-port 100BASE-X (SFPs Optional)
WS-X4124-FX-MT	4500 FE Switching Module, 24 100FX (MTRJ)
WS-X4124-FX-MT=	4500 FE Switching Module, 24 100FX (MTRJ) (Spare)
WS-X4148-FE-BD-LC	4500 FE Module, 48-port BX-D (LC) (1550)
WS-X4148-FE-BD-LC=	4500 FE Module, 48-port BX-D (LC) (1550) (Spare)
WS-X4148-FE-LX-MT	4500 FE module, 48-port 100LX SMF (MTRJ)
WS-X4148-FE-LX-MT=	4500 FE module, 48-port 100LX SMF (MTRJ)
WS-X4148-FX-MT	4500 FE Switching Module, 48-100FX MMF (MTRJ)
WS-X4148-FX-MT=	4500 FE Switching Module, 48-100FX MMF (MTRJ) (Spare)
WS-U4504-FX-MT	4500 4-port 100FX (MTRJ) Uplink for WS-X4232-RJ-XX
WS-U4504-FX-MT=	4500 4-port 100FX (MTRJ) Uplink for WS-X4232-RJ-XX
Catalyst 4500 1000 Base-X GbE Line Cards	
WS-X4306-GB	4500 Gigabit Ethernet Module, 6-port (GBIC)
WS-X4306-GB=	4500 Gigabit Ethernet Module, 6-port (GBIC) (Spare)
WS-X4506-GB-T	4500 6-port 10/100/1000 PoE or SFP (Optional)
WS-X4506-GB-T=	4500 6-port 10/100/1000 PoE or SFP (Optional)
WS-X4302-GB	4500 Gigabit Ethernet Module, 2-port (GBIC)
WS-X4302-GB=	4500 Gigabit Ethernet Module, 2-port (GBIC)
WS-X4418-GB	4500 GbE Module, Server Switching 18-port (GBIC)
WS-X4418-GB=	4500 GbE Module, Server Switching 18-port (GBIC)
WS-X4448-GB-SFP	4500 48-port 1000Base-X (SFPs Optional)
WS-X4448-GB-SFP=	4500 48-port 1000Base-X (SFPs Optional)

Product Overview (continued)

Product Number	Product Description
Catalyst 4500 Transceiver Modules	
WS-X4593-E=	Catalyst 4503-E Fan Tray (Spare)
WS-X4596-E=	Catalyst 4506-E Fan Tray (Spare)
WS-X4597-E=	Catalyst 4507R-E Fan Tray (Spare)
WS-X4582-E=	Catalyst 4510R-E Fan Tray (Spare)
WS-G5483=	1000BASE-T GBIC
WS-G5484	1000BASE-SX Short Wavelength GBIC (Multimode only)
WS-G5486	1000BASE-LX/LH Long-haul GBIC (Single Mode or Multimode)
WS-G5487	1000Base-ZX Extended-reach GBIC (Single Mode)
GLC-T	1000BASE-T SFP
GLC-T24	24 GLC-T SFP
GLC-SX-MM	GbE SFP, LC Connector SX Transceiver
GLC-LH-SM	GbE SFP, LC Connector LX/LH Transceiver
GLC-FE-100BX-D48	48 Units of GLC-FE-100BX-D
GLC-FE-100BX-D	100BASE-BX10-D SFP
GLC-FE-100BX-U	100BASE-BX10-U SFP
GLC-FE-100FX	100BASE-FX SFP for FE Port
GLC-FE-100FX24	24 Units of GLC-FE-100FX
GLC-FE-100FX48	48 Units of GLC-FE-100FX
GLC-FE-100LX	100BASE-LX SFP for FE Port
GLC-FE-100LX48	48 Units of GLC-FE-100LX
GLC-BX-D	1000BASE-BX SFP, 1490 nm
GLC-BX-U	1000BASE-BX SFP, 1310 nm
GLC-ZX-SM=	1000BASE-ZX SFP
X2-10GB-CX4	10GBASE-CX4 X2 Module
X2-10GB-SR	10GBASE-SR X2 Module
X2-10GB-ER=	10GBASE-ER X2 Module
X2-10GB-LX4	10GBASE-LX4 X2 Module
X2-10GB-LR	10GBASE-LR X2 Module
WS-X4K-CLOCK-E=	Catalyst 4507R-E/4510R-E Clock Module (Spare)
WS-X4590-E=	Catalyst 4507R-E/4510R-E Fabric Redundancy Module
C4K-SLOT-CVR-E	Catalyst 4500 E-Series Family Slot Cover
C4K-SLOT-CVR-E=	Catalyst 4500 E-Series Family Slot Cover (Spare)
WS-X4503E-23CNTR=	C4503 E Center Mount 23 Inch Rack Kit L/R C
WS-X4506E-23CNTR=	C4506 E Center Mount 23 Inch Rack Kit L/R C

Product Number	Product Description
Catalyst 4500 Transceiver Modules (continued)	
WS-X4507E-23CNTR=	C4507R E Center Mount 23 Inch Rack Kit L/R C
WS-X4510E-23CNTR=	C4510R E Center Mount 23 Inch Rack Kit L/R C
Catalyst 4500 Compact Flash (continued)	
MEM-C4K-FLD64M	4500 IOS-based Supervisor, Compact Flash, 64MB Option
MEM-C4K-FLD64M=	4500 IOS-based Supervisor, Compact Flash, 64MB Spare
MEM-C4K-FLD128M	4500 IOS-based Supervisor, Compact Flash, 128MB Option
MEM-C4K-FLD128M=	4500 IOS-based Supervisor, Compact Flash, 128MB Spare
MEM-C4K-256-SDRAM=	256 DIMM DRAM for Supervisor II-Plus-10GbE
MEMC4K-U5 12D-SDRAM	512 DIM DRAM Factory Upgrade for Supervisor II-Plus-10GbE
MEMC4K-5 12D-SDRAM=	512 DIMM DRAM for Supervisor II-Plus-10GbE and V-10GbE
Catalyst 4500 Accessories	
WS-X4593=	4503 Fan Tray (Spare)
WS-X4596=	4506 Fan Tray (Spare)
WS-X4597=	4507R Fan Tray (Spare)
WS-X4598=	4510R 23-inch Rack Mount
WS-X4581=	4510R 19-inch Rack Mount
WS-X4582=	4510R Fan Tray (Spare)
WS-X4583=	4503 19-inch Rack Mount
WS-X4584=	4503 23-inch Rack Mount
WS-X4585=	4506 19-inch Rack Mount
WS-X4586=	4506 23-inch Rack Mount
WS-X4587=	4507R 19-inch Rack Mount
WS-X4588=	4507R 23-inch Rack Mount
WS-X4K-CLOCK=	4507R/4510R Clock Module (Spare)
WS-X4590=	4507R/4510R Fabric Redundancy Module
WS-X4503-23CNTR=	4503 Center Mount 23-inch Rack Kit L/R
WS-X4503-FILTER=	4503 Center Mount 23-inch Filter (1 Set)
WS-X4506-23CNTR=	4506 Center Mount 23-inch Rack Kit L/R
WS-X4506-FILTER=	4506 Center Mount 23-inch Filter (1 Set)
WS-X4507-23CNTR=	4507R Center Mount 23-inch Rack Kit L/R
WS-X4507-FILTER=	4507R Center Mount 23-inch Filter (1 Set)
WS-X4510-23CNTR=	4510R Center Mount 23-inch Rack Kit L/R
WS-X4510-FILTER=	4510R Center Mount 23-inch Filter (1 Set)
C4K-SLOT-CVR=	4000 Family Slot Cover (Spare)

Product Overview (continued)

Product Number	Product Description
Catalyst 4500 Accessories (continued)	
C4K-UPLINK-CVR	4000 Uplink Cover
C4K-UPLINK-CVR=	4000 Uplink Cover (Spare)
CAB-AC-2800W-EU	Europe Power Cord
CAB-AC-2800W-EU=	Europe Power Cord
CAB-AC-2800W-INT	International Power Cord
CAB-AC-2800W-INT=	International Power Cord
CAB-AC-2800W-TWLK	U.S. Power Cord, Twist Lock, NEMA 6-20 Plug
CAB-AC-2800W-TWLK=	U.S. Power Cord, Twist Lock, NEMA 6-20 Plug
CAB-AC-2800W-6-20	Non-locking NEMA Cord for the 2800WAC Power Supply
CAB-AC-2800W-6-20=	Non-locking NEMA Cord for the 2800WAC Power Supply
CAB-US515P-C19-US	NEMA 5-15 to IEC-C19 13-foot US
CAB-US515P-C19-US=	NEMA 5-15 to IEC-C19 13-foot US
CAB-L520P-C19-US	NEMA L5-20 to IEC-C19 6-foot US
CAB-L520P-C19-US=	NEMA L5-20 to IEC-C19 6-foot US
CAB-L620P-C19-US	NEMA L6-20 to IEC-C19 14-foot US
CAB-L620P-C19-US=	NEMA L6-20 to IEC-C19 14-foot US
CAB-US620P-C19-US	NEMA 6-20 to IEC-C19 13-foot US
CAB-US620P-C19-US=	NEMA 6-20 to IEC-C19 13-foot US
CAB-CEE77-C19-EU	CEE 7/7 to IEC-C19 13-foot Europe
CAB-CEE77-C19-EU=	CEE 7/7 to IEC-C19 13-foot Europe
CAB-I309-C19-INT	IEC-309 to IEC-C19 13-foot International
CAB-I309-C19-INT=	IEC-309 to IEC-C19 13-foot International
CAB-A3112-C19-AUS	AS-3112 to IEC-C19 14-foot Australia
CAB-A3112-C19-AUS=	AS-3112 to IEC-C19 14-foot Australia
CAB-C2316-C19-IT=	CEI 23-16 to IEC-C19 14-foot Italy
CAB-C2316-C19-IT	CEI 23-16 to IEC-C19 14-foot Italy
CAB-BS1363-C19-UK	BS-1363 to IEC-C19 14-foot UK
BLANK-PWR-4502=	4500 Blank Power Supply Cover for Auxiliary Power Shelf
CAB-BS1363-C19-UK=	BS-1363 to IEC-C19 14-foot UK
CAB-4502-DC-2M	4500 2 meter DC Cable Set for Auxiliary Power Shelf
CAB-4502-DC-2M=	4500 2 meter DC Cable Set for Auxiliary Power Shelf
CAB-4502-DC-60CM	4500 60 cm DC Cable Set for Auxiliary Power Shelf
CAB-4502-DC-60CM=	4500 60 cm DC Cable Set for Auxiliary Power Shelf

Product Number	Product Description
Catalyst 4500 Accessories (continued)	
CAB-4502AC-EU	AC Power Cord for PWR-4502 (Europe)
CAB-4502AC-EU=	AC Power Cord for PWR-4502 (Europe)
CAB-4502AC-UK=	AC Power Cord for PWR-4502 (UK)
CAB-4502AC-US	L6-20 AC Power Cord for PWR-4502 (North America)
CAB-4502AC-US=	AC Power Cord for PWR-4502 (North America)
WS-X4571=	4500 Connection Strap for Auxiliary Power Shelf
CAB-ACS-10	AC Power Cord (Swiss) 10A
CAB-ACS-10=	AC Power Cord (Swiss) 10A
CAB-ACS-16	AC Power Cord (Swiss) 16A
CAB-ACS-16=	AC Power Cord (Swiss) 16A
CAB-S132-C19-ISRL	S132 to IEC-C19 14-foot (Israel)
CAB-S132-C19-ISRL=	S132 to IEC-C19 14-foot (Israel)
CAB-SABS-C15-IND	SABS 164-1 to IEC-C15 (India)
CAB-SABS-C15-IND=	SABS 164-1 to IEC-C15 (India)
CAB-SABS-C19-IND	SABS 164-1 to IEC-C19 (India)
CAB-SABS-C19-IND=	SABS 164-1 to IEC-C19 (India)
BLANK-PWR-4502	4500 Blank Power Supply Cover for Auxiliary Power Shelf
WS-X4500-PS01=	Plastic Cover for 4500 Power Shelf (WS-P4502-1)
CWDM GBIC Solution for Catalyst 4500	
CWDM-GBIC-1470=	1000BASE-CWDM 1470 nm GBIC (Single Mode only)
CWDM-GBIC-1490=	1000BASE-CWDM 1490 nm GBIC (Single Mode only)
CWDM-GBIC-1510=	1000BASE-CWDM 1510 nm GBIC (Single Mode only)
CWDM-GBIC-1530=	1000BASE-CWDM 1530 nm GBIC (Single Mode only)
CWDM-GBIC-1550=	1000BASE-CWDM 1550 nm GBIC (Single Mode only)
CWDM-GBIC-1570=	1000BASE-CWDM 1570 nm GBIC (Single Mode only)
CWDM-GBIC-1590=	1000BASE-CWDM 1590 nm GBIC (Single Mode only)
CWDM-GBIC-1610=	1000BASE-CWDM 1610 nm GBIC (Single Mode only)
CWDM-MUX8A=	8-channel CWDM Multiplexer/Demultiplexer Module
CWDM-OADM1-1470=	Dual Single-channel OADM Module (1470 nm)
CWDM-OADM1-1490=	Dual Single-channel OADM Module (1490 nm)
CWDM-OADM1-1510=	Dual Single-channel OADM Module (1510 nm)
CWDM-OADM1-1530=	Dual Single-channel OADM Module (1530 nm)
CWDM-OADM1-1550=	Dual Single-channel OADM Module (1550 nm)
CWDM-OADM1-1570=	Dual Single-channel OADM Module (1570 nm)
CWDM-OADM1-1590=	Dual Single-channel OADM Module (1590 nm)

Product Overview (continued)

Product Number	Product Description
CWDM GBIC Solution for Catalyst 4500 (continued)	
CWDM-OADM1-16 10=	Dual Single-channel OADM Module (1610 nm)
CWDM-OADM4-1=	4-channel CWDM OADM Module (1470, 1490, 1510, 1530)
CWDM-OADM4-2=	4-channel CWDM OADM Module (1550, 1570, 1590, 16100)
WDM-1300-1550-S=	1300 nm/1550 nm WDM Splitter Cable
WDM-1300-1550-S=	1300 nm/1550 nm WDM Splitter Cable
CWDM-CHASSIS-2=	2-slot Chassis for CWDM Multiplexer Plug-in Modules
WDM-SFP-2CH-CONV=	2-channel WDM SFP-based transponder
CWDM-MUX-4-SF1=	Single Fiber 4-channel Multiplexer/Demultiplexer
CWDM-MUX-4-SF2=	Single Fiber 4-channel Multiplexer/Demultiplexer
EWDM-MUX8=	8-channels EWDM MUX/DEMUX Module
EWDM-OADM4=	4-channels EWDM OADM Module
EWDM-OADM2=	2-channels EWDM OADM Module
EWDM-OA=	EWDM Optical Amplifier

Notes

Cisco Catalyst Fixed-Configuration Switches

The Cisco Catalyst switch portfolio includes the industry's widest and most versatile selection of fixed-configuration switches, making it easy for customers to find the ideal platform for any deployment. Yet unlike point solutions, these switches share the feature-rich functionality of Cisco IOS software, providing a firm foundation for converged data, voice, and video services.

The Cisco Catalyst 4900, 3750-E, 3750, 3560-E, 3560, 2960, 2940, and Catalyst Express 500 Series switches offer an array of connectivity options, from Fast Ethernet to 10GbE. They range from small, standalone switches to stackable models that function as a single, scalable switching unit. And many models are available with a choice of software images, allowing customers to dictate the level of intelligent network services based on individual needs.



Cisco Catalyst 4900 Series

High-performance switching for datacenter top of rack applications and space constrained LAN aggregation in branch deployments.

The Catalyst 4900 Series are a compact form factor (1-2RU) family of switches providing wire speed GE and 10GbE connectivity and services for top of rack server aggregation in the datacenter and for space constrained branch collapsed core/distribution LAN aggregation. The Catalyst 4900 Series includes four Layer 2-4 fixed-configuration switches.

The Catalyst 4948 switch offers 48 ports of wire-speed 10/100/1000BASE-T with four alternative wired ports that can accommodate optional 1000BASE-X Small Form-factor Pluggable (SFP) optics.

The Catalyst 4948-10GbE switch offers 48 ports of wire-speed 10/100/1000BASE-T with two wire-speed 10 Gigabit Ethernet (10GbE) uplinks via optional 10GbE (X2) optics.

The Catalyst 4928-10GbE switch offers 28 wire-speed Small Form-Factor Pluggable (SFP) ports with two wire-speed 10 Gigabit Ethernet (10GbE) uplinks via optional 10GbE (X2) optics.

The Cisco Catalyst 4900M is a 320-Gbps, two-rack-unit (2RU) semi-fixed configuration switch with 8 fixed wire-speed 10GbE ports on the base unit and 2 optional half-card slots for deployment flexibility. Three half-card modules provide additional 10GbE density or 10/100/1000 copper ports. The 8 port half card supports 1 GE SFPs via the TwinGig adapter.

All models provide exceptional reliability and serviceability, supporting optional internal AC or DC 1 + 1 hot-swappable power supplies and a hot-swappable fan tray with redundant fans.

These switches are available with either the IP Base Software image or the Enterprise Services Software image. The Enterprise Services Software additionally supports Shortest Path First (OSPF), Intermediate System-to-Intermediate System (IS-IS), Enhanced Interior Gateway Routing Protocol (EIGRP), and Border Gateway Protocol (BGP).

Hardware Features

	WS-C4948	WS-C4948-10GE
Forwarding Bandwidth per Box (Gbps)	96	136
Maximum Stack Members	0	0
Total Bandwidth of Stack (Gbps)	0	0
Packets per Second per Box (Mpps)	72	102
MAC Addresses Supported	32,768	55,000
Routes Supported	32,000	32,000
Onboard Memory (DRAM MB)	256	256
10 GbE Density	0	2
Gigabit Ethernet GBIC/SFP Density	4	0
10 GbE X2 Port Density	0	2
10/100/1000 Density	48	48
GE Fiber ports (SFP)	0	0
10/100 Density	0	0
100BASE-FX Density	0	0
Maximum Watt Power Consumption	300	300
PoE: Max. 802.3af Class 3 Devices (15.4W)	0	0
PoE: Max. 802.3af Class 2 Devices (73W)	0	0
AC/DC Support	Yes	Yes
Dimensions (H x W x D) Inches	1.71 x 17.3 x 16.1	1.71 x 17.3 x 16.1
Dimensions (H x W x D) Centimeters	4.4 x 43.9 x 40.9	4.4 x 43.9 x 40.9
Unit Weight Pounds (Kilograms)	16.5 (7.48)	16.5 (7.48)

	WS-C4928-10GE	WS-4900M
Forwarding Bandwidth per Box (Gbps)	96	320
Maximum Stack Members	0	0
Total Bandwidth of Stack (Gbps)	0	0
Packets per Second per Box (Mpps)	102	250
MAC Addresses Supported	55,000	55,000
Routes Supported	32,000	200,000
Onboard Memory (DRAM MB)	256	512
10 GbE Density	2	24
Gigabit Ethernet GBIC/SFP Density	28	32
10 GbE X2 Port Density	2	24
10/100/1000 Density	0	40
GE Fiber ports (SFP)	28	32
10/100 Density	0	0
100BASE-FX Density	0	0
Maximum Watt Power Consumption	300	400
PoE: Max. 802.3af Class 3 Devices (15.4W)	0	0
PoE: Max. 802.3af Class 2 Devices (73W)	0	0
AC/DC Support	Yes	Yes
Dimensions (H x W x D) Inches	1.71 x 17.3 x 16.1	3.5 x 17.2 x 17.9
Dimensions (H x W x D) Centimeters	4.4 x 43.9 x 40.9	8.9 x 43.7 x 45.5
Unit Weight Pounds (Kilograms)	16.5 (7.48)	34.0 lb (15.4 kg)

Cisco Catalyst 4900 Series Spotlight

Wire-speed Performance

The Cisco Catalyst 4900 Series delivers wire-speed throughput on all ports from 96 Gbps to 320 Gbps with low-latency for data-intensive applications. Switching performance is guaranteed regardless of the number of route entries or Layer 3 and 4 services enabled. The hardware-based Cisco Express Forwarding (CEF) routing architecture allows for increased scalability and performance.

Exceptional Reliability

The Cisco Catalyst 4900 Series offers redundant hot-swappable internal AC or DC power supplies for nonstop operation. The 1+1 power supply design provides A-to-B failover when power supplies are connected to different circuits. AC and DC power supplies can be mixed in the same unit for maximum deployment flexibility. The Cisco Catalyst 4900 Series also features a hot-swappable fan tray with four redundant fans for additional serviceability and availability.

Product Overview

Product Number	Product Description
Catalyst 4900 Switches	
WS-C4948-S	4948, IPB S/W, 48-port 10/100/1000+4 SFP, 1 AC Power Supply
WS-C4948-E	4948, ES S/W 48-port 10/100/1000+4 SFP, 1 AC Power Supply
WS-C4948	4948, Optional S/W, 48-port 10/100/1000+4 SFP, No Power Supply
WS-C4948-10GE	4948, Optional S/W, 48-port 10/100/1000+2*10GbE (X2), No Power Supply
WS-C4948-10GE-S	4948, IPB S/W, 48-port 10/100/1000+2*10GbE (X2), 1 AC Power Supply
WS-C4948-10GE-E	4948, ES Image, 48-port 10/100/1000+2*10GbE (X2), 1 AC Power Supply
WS-C4928-10GE	4928, Optional S/S, 28-port 1000Base-X (SFP) +2*10GbE (X2), No Power Supply
WS-C4900M	Base System with 8-port (X2) and 2 Half Slots
WS-X4904-10GE	4 Port Wire Speed 10GbE Card for 4900M
WS-X4908-10GE	8 Port 2:1 10GbE Card for 4900M
WS-X4920-GB-RJ45	20 Port 10/100/1000 RJ45 Card for 4900M
Catalyst 4900 Transceiver Modules	
GLC-T	1000BASE-T SFP
GLC-SX-MM	GbE SFP, LC Connector SX Transceiver
GLC-LH-SM	GbE SFP, LC Connector LX/LH Transceiver
GLC-BX-D	1000BASE-BX SFP, 1490nm
GLC-BX-U	1000BASE-BX SFP, 1310nm
GLC-ZX-SM	1000BASE-ZX SFP
CWDM-SFP-1470=	CWDM 1470 NM SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1490=	CWDM 1490 NM SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1510=	CWDM 1510 NM SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1530=	CWDM 1530 NM SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1550=	CWDM 1550 NM SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1570=	CWDM 1570 NM SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1590=	CWDM 1590 NM SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1610=	CWDM 1610 NM SFP Gigabit Ethernet and 1G/2G FC
X2-10GB-CX4	10GBASE-CX4 X2 Module
X2-10GB-ER	10GBASE-ER X2 Module
X2-10GB-ER=	10GBASE-ER X2 Module
X2-10GB-SR	10GBASE-SR X2 Module
X2-10GB-LX4	10GBASE-LX4 X2 Module
X2-10GB-LR	10GBASE-LR X2 Module

Product Number	Product Description
Catalyst 4900 Accessories	
PWR-C49-300AC	4948 300-Watt AC Power Supply
PWR-C49-300AC=	4948 300-Watt AC Power Supply (Spare)
PWR-C49-300AC/2	4948 300-Watt AC Power Supply Redundant
PWR-C49-300DC	4900 300-Watt DC Power Supply
PWR-C49-300DC=	4900 300-Watt DC Power Supply (Spare)
PWR-C49-300DC/2	4900 300-Watt DC Power Supply Redundant
PWR-C49M-1000AC	4900M AC Power Supply, 1000W
PWR-C49M-1000AC=	4900M AC Power Supply, 1000W
PWR-C49M-1000AC/2	Redundant AC Power Supply for 4900M
WS-X4991=	4948 Fan Tray (Spare)
WS-X4992=	4900M Fan Tray (Spare)
C4948-ACC-KIT=	4900 Spare Accessory Kit
C4948-BKT-KIT=	4900 Front and Rear Mount Brackets



Cisco Catalyst 3750-E Series

Fixed-configuration switches offering multilayer switching and Cisco StackWise™ Plus technology for enterprise branch offices and mid-market organizations.

The Cisco Catalyst 3750-E Series with StackWise Plus is an enterprise-class line of stackable wiring closet switches. Combining 10/100/1000 and Power over Ethernet (PoE) configurations with upgradable 1 Gigabit Ethernet to 10 Gigabit Ethernet (10GbE) uplinks, Catalyst 3750-E Series help enhance worker productivity by enabling applications such as IP telephony, wireless, and video.

Key Features

- TwinGig converter module for migrating uplinks from 1 Gigabit Ethernet (SFP) to 10GbE (X2)
- Enhanced PoE support with configurations beyond 15.4 watts of support for all ports.
- Industry first portfolio to scale beyond 15.4W per port delivering maximum solution simplicity for 802.11n access point deployments
- StackWise Plus for ease of use and resiliency with 64 Gbps stacking
- Field-replaceable and upgradable power supplies and fan tray
- Wire-rate performance with 68 Gbps non-blocking switching fabric
- Multicast routing, IPv6 routing, and access control list in hardware
- Out-of-band Ethernet management port along with RS-232 console port
- Full backward compatibility with the Catalyst 3750 Series

Hardware Features

	WS-C3750E-24TD	WS-C3750E-48TD
Switching Fabric (Gbps)	64	64
Maximum Stack Members	9	9
Clustering	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster
Total Bandwidth of Stack (Gbps)	64	64
Packets per Second per Box (Mpps)	65.5	101.2
MAC Addresses Supported	12,000	12,000
Routes Supported	11,000	11,000
Onboard Memory (DRAM MB)	128	128
10 GbE Density	2	2
Gigabit Ethernet GBIC/SFP Density	4	4
10 GbE XENPAK/X2Port Density	2	2
10/100/1000 Density	24	48
10/100 Density	0	0
100BASE-FX Density	0	0
Maximum Watt Power Consumption		
265W AC	331	331
265W DC	379	379
750W AC	882	882
1150W AC	1386	1386
PoE: Maximum 802.3af Class 3 Devices (15.4W)	0	0
PoE: Maximum 802.3af Class 2 Devices (7.3W)	0	0
AC/DC Support	AC and DC Available	AC and DC Available
Redundant Power Supply Support	Yes	Yes
Dimensions (H x W x D) Inches	1.73 x 17.5 x 11.8	1.73 x 17.5 x 11.9
Dimensions (H x W x D) Centimeters	4.4 x 44.5 x 30.1	4.4 x 44.5 x 30.2
Unit Weight Pounds (Kilograms)	17.9 (8.1)	18.8 (8.6)

	WS-C3750E-24PD	WS-C3750E-48PD	WS-C3750E-48PD-F
Switching Fabric (Gbps)	64	64	64
Maximum Stack Members	9	9	9
Clustering	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster
Total Bandwidth of Stack (Gbps)	64	64	64
Packets per Second per Box (Mpps)	65.5	101.2	101.2
MAC Addresses Supported	12,000	12,000	12,000
Routes Supported	11,000	11,000	11,000
Onboard Memory (DRAM MB)	128	128	128
10 GbE Density	2	2	2
Gigabit Ethernet GBIC/SFP Density	4	4	4
10 GbE XENPAK/X2Port Density	2	2	2
10/100/1000 Density	24	48	48
10/100 Density	0	0	0
100BASE-FX Density	0	0	0
Maximum Watt Power Consumption			
265W AC	331	331	331
265W DC	379	379	379
750W AC	882	882	882
1150W AC	1386	1386	1386
PoE: Maximum 802.3af Class 3 Devices (15.4W)	24	24	48
PoE: Maximum 802.3af Class 2 Devices (7.3W)	24	48	48
AC/DC Support	AC and DC Available	AC and DC Available	AC and DC Available
Redundant Power Supply Support	Yes	Yes	Yes
Dimensions (H x W x D) Inches	1.73 x 17.5 x 11.1	1.73 x 17.5 x 11.11	1.75 x 17.5 x 21.7
Dimensions (H x W x D) Centimeters	4.4 x 44.5 x 30.3	4.4 x 44.5 x 30.4	4.45 x 44.5 x 55.2
Unit Weight Pounds (Kilograms)	18.3 (8.3)	19.2 (8.75)	20.9 (9.5)

For further information on the Cisco Catalyst 3750 Metro Ethernet Series, go to: <http://www.cisco.com/en/US/partner/products/hw/switches/ps5532/index.html>

Cisco Catalyst 3750-E Series Spotlight

Cisco StackWise Plus Technology

A unique stacking architecture optimized for Gigabit and 10GbE, this technology is designed to respond to additions, deletions, and redeployment while maintaining constant performance. It unites up to nine individual Cisco Catalyst 3750-E switches into a single logical unit, using special interconnect cables and stacking software. Cisco Catalyst 3750-E switches can also be stacked with existing Catalyst 3750 switches. The stack is managed as a single switching unit controlled by a master switch elected from one of the member switches. The master switch automatically creates and updates all the switching and routing tables. A working stack can accept new members or delete old members without service interruption.

Addition of IP Communications

Cisco Catalyst 3750-E Series PoE models support Cisco IP phones and Cisco Aironet® wireless LAN (WLAN) access points, as well as any IEEE 802.3af-compliant end device. The Catalyst 3750-E 24-port models can support 24 simultaneous full-powered PoE ports at 15.4 W for maximum powered device support. The 48-port versions can deliver the necessary power to support all 48 ports at 15.4W.

Software Features

Cisco Catalyst 3750-E Series is orderable with two feature sets:

- The IP Base feature set includes advanced QoS, security, and basic routing functionality.
- The IP Services feature set provides a richer set of enterprise-class features, including advanced hardware-based IP unicast and multicast routing as well as Virtual Route Forwarding (VRF), and policy-based routing (PBR).

Upgrades

- The IP Advanced Services software license can be purchased separately to enable IPv6 routing.

Simplified Management

Available for the Catalyst 3750-E Series, Cisco Network Assistant is a centralized management application that simplifies the administration task of Cisco switches, routers, and wireless access points. Free of charge, Cisco Network Assistant provides configuration wizards that greatly simplify the implementation of converged networks and intelligent network services.

Product Overview

Product Number	Product Description
Catalyst 3750-E Series 10/100/1000 GbE, 10GbE Workgroup Switch	
WS-C3750E-24TD-S	Catalyst 3750E 24 10/100/1000 + 2* 10GE (X2), 265W, IPB S/W
WS-C3750E-24TD-E	Catalyst 3750E 24 10/100/1000 + 2* 10GE(X2), 265W, IPS S/W
WS-C3750E-24TD-SD	Catalyst 3750E 24 10/100/1000 + 2* 10GE (X2), 265W DC, IPB S/W
WS-C3750E-48TD-S	Catalyst 3750E 48 10/100/1000 + 2* 10GE (X2), 265W, IPB S/W
WS-C3750E-48TD-E	Catalyst 3750E 48 10/100/1000 + 2* 10GE (X2), 265W, IPS S/W
WS-C3750E-24PD-S	Catalyst 3750E 24 10/100/1000 PoE + 2* 10GE (X2), 750W, IPB S/W
WS-C3750E-24PD-E	Catalyst 3750E 24 10/100/1000 PoE + 2*10GE (X2), 750W, IPS S/W
WS-C3750E-48PD-S	Catalyst 3750E 48 10/100/1000 PoE + 2* 10GE (X2), 750W, IPB S/W
WS-C3750E-48PD-E	Catalyst 3750E 48 10/100/1000 PoE + 2* 10GE (X2), 750W, IPS S/W
WS-C3750E-48PD-SF	Catalyst 3750E 48 10/100/1000 PoE + 2* 10GE (X2), 1150W, IPB S/W
WS-C3750E-48PD-EF	Catalyst 3750E 48 10/100/1000 PoE + 2* 10GE (X2), 1150W, IPS S/W
WS-C3750E-48TD-SD	Catalyst 3750E 48 10/100/1000 + 2* 10GE (X2), 265W DC, IPB S/W

Catalyst 3750-E Series Product Activation Keys

3750E-AISK9LCBQTY	Advanced IP Services for 3750-E, 24 Ports, Upgrade from Base
3750E-AISK9LCSQTY	Advanced IP Services for 3750-E, 24 Ports, Upgrade from IPS
3750E48-AISK9LCBQ	Advanced IP Services for 3750-E, 48 Ports, Upgrade from Base
3750E48-AISK9LCSQ	Advanced IP Services for 3750-E, 48 Ports, Upgrade from IPS
3750E48-IPSLCB-QTY	IP Services for 3750-E, 48 Ports, Upgrade from IP Base
3750E-IPB-LIC-QTY	IP Base for 3750-E (Default License)
3750E-IPSLCB-QTY	IP Services for 3750-E, 24 Ports, Upgrade from IP Base

Power Supplies for the Catalyst 3750-E Series

C3K-BLWR-60CFM=	Fan Module for the 3750-E and 3560-E
C3K-PWR-265WAC=	3750-E/3560-E 265W AC Power Supply (Spare)
C3K-PWR-265WDC=	3750-E/3560-E 265W DC Power Supply (Spare)
C3K-PWR-750WAC=	3750-E/3560-E/RPS 2300 750W AC Power Supply (Spare)
C3K-PWR-1150WAC=	3750-E/3560-E/RPS 2300 1150W AC Power Supply (Spare)

TwinGig Converter Module for the Catalyst 3750-E Series

CVR-X2-SFP	Cisco TwinGig Converter Module
CVR-X2-SFP=	Cisco TwinGig Converter Module

SFPs for the Catalyst 3750-E Series

GLC-BX-D=	1000BASE-BX SFP, 1490 nm
GLC-BX-U=	1000BASE-BX SFP, 1310 nm

Product Overview (continued)

Product Number	Product Description
SFPs for the Catalyst 3750-E Series (continued)	
GLC-GE-100FX=	100FX SFP on GbE SFP Ports for DSBU Switches
GLC-BX-D=	1000BASE-BX SFP, 1490 nm
GLC-BX-U=	1000BASE-BX SFP, 1310 nm
GLC-GE-100FX=	100BASE-FX SFP for GE SFP Port on 3750, 3560, 2970, 2960
GLC-LH-SM=	GE SFP, LC Connector LX/LH Transceiver
GLC-SX-MM=	GE SFP, LC Connector SX Transceiver
GLC-T=	1000BASE-T SFP
GLC-ZX-SM=	1000BASE-ZX SFP
CWDM-SFP-1470=	CWDM 1470 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1490=	CWDM 1490 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1510=	CWDM 1510 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1530=	CWDM 1530 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1550=	CWDM 1550 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1570=	CWDM 1570 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1590=	CWDM 1590 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1610=	CWDM 1610 nm SFP Gigabit Ethernet and 1G/2G FC
DWDM-SFP-3033=	DWDM SFP 1530.33 nm SFP (100 GHz ITU grid)
DWDM-SFP-3112=	DWDM SFP 1531.12 nm SFP (100 GHz ITU grid)
DWDM-SFP-3190=	DWDM SFP 1531.90 nm SFP (100 GHz ITU grid)
DWDM-SFP-3268=	DWDM SFP 1532.68 nm SFP (100 GHz ITU grid)
DWDM-SFP-3425=	DWDM SFP 1534.25 nm SFP (100 GHz ITU grid)
DWDM-SFP-3504=	DWDM SFP 1535.04 nm SFP (100 GHz ITU grid)
DWDM-SFP-3582=	DWDM SFP 1535.82 nm SFP (100 GHz ITU grid)
DWDM-SFP-3661=	DWDM SFP 1536.61 nm SFP (100 GHz ITU grid)
DWDM-SFP-3819=	DWDM SFP 1538.19 nm SFP (100 GHz ITU grid)
DWDM-SFP-3898=	DWDM SFP 1538.98 nm SFP (100 GHz ITU grid)
DWDM-SFP-3977=	DWDM SFP 1539.77 nm SFP (100 GHz ITU grid)
DWDM-SFP-4056=	DWDM SFP 1540.56 nm SFP (100 GHz ITU grid)
DWDM-SFP-4214=	DWDM SFP 1542.14 nm SFP (100 GHz ITU grid)
DWDM-SFP-4294=	DWDM SFP 1542.94 nm SFP (100 GHz ITU grid)
DWDM-SFP-4373=	DWDM SFP 1543.73 nm SFP (100 GHz ITU grid)
DWDM-SFP-4453=	DWDM SFP 1544.53 nm SFP (100 GHz ITU grid)

Product Number	Product Description
X2 for Catalyst 3750-E	
X2-10GB-ER=	10GBASE-ER X2 Module
X2-10GB-LR=	10GBASE-LR X2 Module
X2-10GB-LRM=	10GBASE-LRM X2 Module
X2-10GB-SR=	10GBASE-SR X2 Module
X2-10GB-LX4=	10GBASE-LX4 X2 Module
X2-10GB-CX4=	10GBASE-CX4 X2 Module
10GBASE-CX4 X2 Module	
CSS5-CABLX-LCSC=	CSS11500 10-Meter Fiber Single Mode LX LC-to-SC Connectors
CSS5-CABSX-LC=	CSS11500 10-Meter Fiber Multimode SX LC Connectors
CSS5-CABSX-LCSC=	CSS11500 10-Meter Fiber Multimode SX LC-to-SC Connectors
Power Cords for the Catalyst 3750-E Series	
CAB-AC	Power Cord, US
CAB-AC=	Power Cord, US
CAB-16AWG-AC	Power Cord, 16 AWG
CAB-16AWG-AC=	Power Cord, 16 AWG
CAB-ACA	Power Cord, Australia
CAB-ACA=	Power Cord, Australia
CAB-ACR	Power Cord, Argentina
CAB-ACR=	Power Cord, Argentina
CAB-ACS	Power Cord, Switzerland
CAB-ACS=	Power cord, Switzerland
CAB-ACU	Power Cord, UK
CAB-ACU=	Power Cord, UK
CAB-JPN=	Power Cord, Japan
CAB-IND=	Power Cord, India
CAB-ACE	Power Cord, Europe
CAB-ACE=	Power Cord, Europe
CAB-ACI	Power Cord, Italy
CAB-ACI=	Power Cord, Italy
CAB-JPN	Power Cord, Japan
CAB-IND	Power Cord, India

Product Overview (continued)

Product Number	Product Description
Power Cords for the Catalyst 3750-E Series (continued)	
CAB-ACI	Power Cord, Italy
CAB-ACI=	Power Cord, Italy
CAB-JPN	Power Cord, Japan
CAB-IND	Power Cord, India
CAB-L620P-C13-JPN	Power Cord, 250V AC, 15A, NEMA L6-20 to C13, Japan
CAB-L620P-C13-JPN=	Power Cord, 250V AC, 15A, NEMA L6-20 to C13, Japan
CAB-L620P-C13-US	Power Cord, 250V AC, 15A, NEMA L6-20 to C13, US
CAB-L620P-C13-US=	Power Cord, 250V AC, 15A, NEMA L6-20 to C13, US

Spare Rack Mount Kits for the 3750-E Series

RCKMNT-E-1RU=	Rack Mount Kit 1RU 19in for Cat 3750-E and 3560-E Series
RCKMNT-E-MISC=	Rack Mount 1RU 23in 24in ETSI Wall Mount for Cat 3750-E and 3560-E

Catalyst 3750-E Relicensing for Used Equipment

3750E-LIC=	Product Activation Key for 3750 E
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RPS 2300 for the Catalyst 3750 Series

PWR-RPS2300	Cisco Redundant Power System 2300 and Blower, No Power Supply
ACC-RPS2300=	Spare Accessory Kit for Cisco Redundant Power System 2300
BLNK-RPS2300	Bay Insert for Cisco Redundant Power System 2300
BLNK-RPS2300=	Spare Bay Insert for Cisco Redundant Power System 2300
CAB-RPS2300	RPS 2300 Cable for Devices other than E-Series Switches
CAB-RPS2300=	Spare RPS2300 Cable for Devices other than E-Series Switches
CAB-RPS2300-E	RPS2300 Cable for 3750E/3560E Switches
CAB-RPS2300-E=	Spare RPS2300 Cable for 3750E/3560E Switches
PWR-RPS2300=	Spare Cisco RPS 2300 w/Blower; PS blank, No Power Supply
BLWR-RPS2300=	Spare 45CFM Blower for Cisco Redundant Power System 2300
C3K-PWR-750WAC=	3750-E/3560-E/RPS 2300 750WAC Power Supply (Spare)
C3K-PWR-1150WAC=	3750-E/3560-E/RPS 2300 1150WAC Power Supply (Spare)

Cisco StackWise Cables for the Catalyst 3750-E Series

CAB-STACK-50CM=	Cisco StackWise 50CM Stacking Cable
CAB-STACK-1M	Cisco StackWise 1M Stacking Cable
CAB-STACK-1M=	Cisco StackWise 1M Stacking Cable
CAB-STACK-3M	Cisco StackWise 3M Stacking Cable

Product Number	Product Description
Cisco StackWise Cables for the Catalyst 3750-E Series (continued)	
CAB-STACK-3M=	Cisco StackWise 3M Stacking Cable
CAB-STACK-50CM-NH	Cisco StackWise 50CM Non-Halogen Lead-free Stacking Cable
CAB-STACK-50CM-NH=	Cisco StackWise 50CM Non-Halogen Lead-free Stacking Cable
CAB-STACK-1M-NH	Cisco StackWise 1M Non-Halogen Lead-free Stacking Cable
CAB-STACK-1M-NH=	Cisco StackWise 1M Non-Halogen Lead-free Stacking Cable
CAB-STACK-3M-NH	Cisco StackWise 3M Non-Halogen Lead-free Stacking Cable
CAB-STACK-3M-NH=	Cisco StackWise 3M Non-Halogen Lead-free Stacking Cable
X2-10GB-CX4=	10GBASE-CX4 X2 Module



Cisco Catalyst 3750 Series

Fixed-configuration switches offering multilayer switching and Cisco StackWise™ technology for enterprise branch offices and mid-market organizations.

The Cisco Catalyst 3750 Series is an innovative line of multilayer Fast Ethernet and Gigabit Ethernet switches featuring Cisco StackWise technology, a 32 Gbps stack interconnect that allows customers to build a unified, highly resilient switching system—one switch at a time.

Up to nine Catalyst 3750 Series switches can be stacked in any combination, enabling organizations to mix and match to meet specific requirements. Additional 10/100, 10/100/100, 10 Gigabit Ethernet (10GbE), and Power over Ethernet (PoE) connectivity can be deployed as necessary, offering a simple and cost-effective pay-as-you-go approach to network upgrades.

The Catalyst 3750 Series can be purchased with the IP Base (formerly called SMI) or IP Services (formerly called EMI) licenses, and can be upgraded in the field to Advanced IP Services licenses. The IP Base license offers advanced QoS, rate-limiting, ACLs, and basic routing functionality. The IP Services license provides a richer set of enterprise-class features, including advanced hardware-based IP Unicast and IP Multicast routing as well as Policy-based Routing (PBR). The Advanced IP Services license adds IPv6 routing and advanced IP services.

Cisco Catalyst 3750 Series Spotlight

Cisco StackWise Technology

A unique stacking architecture optimized for Gigabit Ethernet, this technology is designed to respond to additions, deletions, and redeployment while maintaining constant performance. It unites up to nine individual Catalyst 3750 switches into a single logical unit, using special interconnect cables and stacking software. The stack is managed as a single switching unit controlled by a master switch elected from one of the member switches. The master switch automatically creates and updates all the switching and routing tables. A working stack can accept new members or delete old members without service interruption.

Addition of IP Communications

Cisco Catalyst 3750 Series PoE models support Cisco IP phones and Cisco Aironet® wireless LAN (WLAN) access points, as well as any IEEE 802.3af-compliant end device. The Catalyst 3750 24-port models can support 24 simultaneous full-powered PoE ports at 15.4W for maximum powered device support. The 48-port versions can deliver the necessary power to support 24 ports at 15.4W, 48 ports at 7.3W, or any combination in between.

Hardware Features

	WS-C3750-24TS	WS-C3750-48TS
Switching Fabric (Gbps)	32	32
Maximum Stack Members	9	9
Clustering	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster
Total Bandwidth of Stack (Gbps)	32	32
Packets per Second per Box (Mpps)	6.5	13.1
MAC Addresses Supported	12,000	12,000
Routes Supported	11,000	11,000
Onboard Memory (DRAM MB)	128	128
10 GbE Density	0	0
Gigabit Ethernet GBIC/SFP Density	2	4
10 GbE XENPAK/X2Port Density	0	0
10/100/1000 Density	0	0
10/100 Density	24	48
100BASE-FX Density	0	0
Maximum Watt Power Consumption	50	75
PoE: Maximum 802.3af Class 3 Devices (15.4W)	0	0
PoE: Maximum 802.3af Class 2 Devices (7.3W)	0	0
AC/DC Support	AC only	AC only
Redundant Power Supply Support	Yes	Yes
Dimensions (H x W x D) Inches	1.73 x 17.5 x 11.8	1.73 x 17.5 x 11.8
Dimensions (H x W x D) Centimeters	4.4 x 44.5 x 30.1	4.4 x 44.5 x 30.1
Unit Weight Pounds (Kilograms)	8 (3.6)	9.1 (4.1)

	WS-C3750-24PS	WS-C3750-48PS	WS-C3750G-24WS	WS-C3750-24FS
Switching Fabric (Gbps)	32	32	32	32
Maximum Stack Members	9	9	4	9
Clustering	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster
Total Bandwidth of Stack (Gbps)	32	32	32	32
Packets per Second per Box (Mpps)	6.5	13.1	38.7	6.5
MAC Addresses Supported	12,000	12,000	12,000	12,000
Routes Supported	11,000	11,000	11,000	11,000
Onboard Memory (DRAM MB)	128	128	128	128
10 GbE Density	0	0	1	0
Gigabit Ethernet GBIC/SFP Density	2	4	0	2
10 GbE XENPAK/X2Port Density	0	0	1	0
10/100/1000 Density	0	0	16	0
10/100 Density	24	48	0	0
100BASE-FX Density	0	0	0	24
Maximum Watt Power Consumption	495	540	255	125
PoE: Maximum 802.3af Class 3 Devices (15.4W)	24	24	24	0
PoE: Maximum 802.3af Class 2 Devices (7.3W)	24	48	24	0
AC/DC Support	AC only	AC only	AC only	AC only
Redundant Power Supply Support	Yes	Yes	Yes	Yes
Dimensions (H x W x D) Inches	1.73 x 17.5 x 11.8	1.73 x 17.5 x 14.9	3.5 x 17.5 x 14.5	1.73 x 17.5 x 11.8
Dimensions (H x W x D) Centimeters	4.4 x 44.5 x 30.1	4.4 x 44.5 x 37.8	8.9 x 44.5 x 38.6	4.4 x 44.5 x 30.1
Unit Weight Pounds (Kilograms)	11.3 (5.1)	13.2 (6.0)	21 (9.5)	9.15 (4.15)

Product Overview

Product Number	Product Description
Catalyst 3750 Series 10/100/1000, GbE, 10GbE Workgroup Switch	
WS-C3750G-24T-S	3750 24-port 10/100/1000T Standard Multilayer Image
WS-C3750G-24T-E	3750 24-port 10/100/1000T Enhanced Multilayer Image
WS-C3750G-24TS-S	3750 24-port 10/100/1000 + 4 SFP Standard Multilayer; 15-RU
WS-C3750G-24TS-E	3750 24-port 10/100/1000 + 4 SFP Enhanced Multilayer; 15-RU
WS-C3750G-24TS-S1U	3750 24-port 10/100/1000 + 4 SFP Standard Multilayer; 1-RU
WS-C3750G-24TS-E1U	3750 24-port 10/100/1000 + 4 SFP Enhanced Multilayer; 1-RU
WS-C3750G-24PS-S	3750 24-port 10/100/1000T PoE + 4 SFP Standard Image
WS-C3750G-24PS-E	3750 24-port 10/100/1000T PoE + 4 SFP Enhanced Image
SWLC3750-25-K9	IP Base w/o Crypto with Web-based Device Manager
WS-C3750G-24WS-S25	3750G Integrated Wireless LAN Controller
WS-C3750G-24WS-S50	3750G Integrated Wireless LAN Controller
WS-C3750G-48TS-S	3750 48-port 10/100/1000T + 4 SFP Standard Multilayer
WS-C3750G-48TS-E	3750 48-port 10/100/1000T + 4 SFP Enhanced Multilayer
WS-C3750G-48PS-S	3750 48-port 10/100/1000T PoE + 4 SFP Standard Image
WS-C3750G-48PS-E	3750 48-port 10/100/1000T PoE + 4 SFP Enhanced Image
WS-C3750G-12S-S	3750 12-port SFP Standard Multilayer Image
WS-C3750G-12S-SD	3750 12-port SFP DC Powered Standard Multilayer Image
WS-C3750G-12S-E	3750 12-port SFP Enhanced Multilayer Image
WS-C3750-24FS-S	3750 24-port 100BaseFX + 2 SFP Standard Multilayer Image
SWLC526K9-42	Wireless LAN Controller Software for WLC526 Express
SWLC3750-50-K9	IP Base w/o Crypto with Web-based Device Manager
WS-C3560-24TS-E	3560 24-port 10/100 + 2 SFP, Enhanced Image
Catalyst 3750 Series 10/100 Workgroup Switches	
WS-C3750-24FS-S	3750 24-port 100BaseFX + 2 SFP Standard Multilayer Image
WS-C3750-24PS-S	3750 24-port 10/100 PoE + 2 SFP Standard Image
WS-C3750-24PS-E	3750 24-port 10/100 PoE + 2 SFP Enhanced Image
WS-C3750-24TS-S	3750 24-port 10/100 + 2 SFP Standard Multilayer Image
WS-C3750-24TS-E	3750 24-port 10/100 + 2 SFP Enhanced Multilayer Image
WS-C3750-48PS-S	3750 48-port 10/100 PoE + 4 SFP Standard Image
WS-C3750-48PS-E	3750 48-port 10/100 PoE + 4 SFP Enhanced Image
WS-C3750-48TS-S	3750 48-port 10/100 + 4 SFP Standard Multilayer Image
WS-C3750-48TS-E	3750 48-port 10/100 + 4 SFP Enhanced Multilayer Image

Product Number	Product Description
Catalyst 3750 Series OADM Modules	
CWDM-CHASSIS-2=	2 Slot Chassis for CWDM Multiplexer Plug-in Modules
CWDM-MUX8A=	8 Channel CWDM Multiplexer/Demultiplexer Module
CWDM-MUX-4-SF1=	Single Fiber 4 Channel Multiplexer/Demultiplexer
CWDM-MUX-4-SF2=	Single Fiber 4 Channel Multiplexer/Demultiplexer
CWDM-OADM1-1470=	Dual Single Channel OADM Module (1470 nm)
CWDM-OADM1-1490=	Dual Single Channel OADM Module (1490 nm)
CWDM-OADM1-1510=	Dual Single Channel OADM Module (1510 nm)
CWDM-OADM1-1530=	Dual Single Channel OADM Module (1530 nm)
CWDM-OADM1-1550=	Dual Single Channel OADM Module (1550 nm)
CWDM-OADM1-1570=	Dual Single Channel OADM Module (1570 nm)
CWDM-OADM1-1590=	Dual Single Channel OADM Module (1590 nm)
CWDM-OADM1-1610=	Dual Single Channel OADM Module (1610 nm)
CWDM-OADM4-1=	4-channel CWDM OADM Module (1470, 1490, 1510, 1530)
CWDM-OADM4-2=	4-channel CWDM OADM Module (1550, 1570, 1590, 16100)
WDM-SFP-2CH-CONV=	2-channel WDM SFP-based Transponder
WDM-1300-1550-S=	1300 nm/1550 nm WDM Splitter Cable
EWDM-MUX8=	8-channel EWDM Multiplexer/Demultiplexer Module
EWDM-OADM4=	4-channel EWDM OADM Module
EWDM-OADM2=	2-channel EWDM OADM Module
EWDM-OA=	EWDM Optical Amplifier
IOS Upgrades for the Catalyst 3750	
CD-3750-EMI=	Enhanced Multilayer Image Upgrade for 3750 FE Models
CD-3750G-EMI=	Enhanced Multilayer Image Upgrade for 24-port 3750 GE Models
CD-3750G-48EMI=	Enhanced Multilayer Image Upgrade for 48-port 3750 GE Models
3750-AISK9-LIC-B=	Advanced IP Services Upgrade for 3750 FE Models with IP Base
3750-AISK9-LIC-S=	Advanced IP Services Upgrade for 3750 FE Models with IP Services
3750G-AISK9-LIC-B=	Advanced IP Services Upgrade for 3750 GE Models with IP Base
3750G-AISK9-LIC-S=	Advanced IP Services Upgrade for 3750 GE Models with IP Services
3750G48-AISK9LC-B=	Advanced IP Services Upgrade for 3750G-48 with IP Base
3750G48-AISK9LC-S=	Advanced IP Services Upgrade for 3750G-48 with IP Services

Product Overview (continued)

Product Number	Product Description
Cisco StackWise Cables for the Catalyst 3750	
CAB-STACK-50CM=	Cisco StackWise 50CM Stacking Cable
CAB-STACK-1M	Cisco StackWise 1M Stacking Cable
CAB-STACK-1M=	Cisco StackWise 1M Stacking Cable
CAB-STACK-3M	Cisco StackWise 3M Stacking Cable
CAB-STACK-3M=	Cisco StackWise 3M Stacking Cable
CAB-STACK-50CM-NH	Cisco StackWise 50CM Non-Halogen Lead-free Stacking Cable
CAB-STACK-50CM-NH=	Cisco StackWise 50CM Non-Halogen Lead-free Stacking Cable
CAB-STACK-1M-NH	Cisco StackWise 1M Non-Halogen Lead-free Stacking Cable
CAB-STACK-1M-NH=	Cisco StackWise 1M Non-Halogen Lead-free Stacking Cable
CAB-STACK-3M-NH	Cisco StackWise 3M Non-Halogen Lead-free Stacking Cable
CAB-STACK-3M-NH=	Cisco StackWise 3M Non-Halogen Lead-free Stacking Cable
SFPs for the Catalyst 3750	
GLC-GE-100FX=	100BASE-FX SFP for GE SFP port on 3750, 3560, 2970, 2960
GLC-LH-SM=	GE SFP, LC Connector LX/LH Transceiver
GLC-SX-MM=	GE SFP, LC Connector SX Transceiver
GLC-T=	1000BASE-T SFP
GLC-ZX-SM=	1000BASE-ZX SFP
CWDM-SFP-1470=	CWDM 1470 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1490=	CWDM 1490 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1510=	CWDM 1510 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1530=	CWDM 1530 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1550=	CWDM 1550 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1570=	CWDM 1570 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1590=	CWDM 1590 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1610=	CWDM 1610 nm SFP Gigabit Ethernet and 1G/2G FC
DWDM-SFP-3033=	DWDM SFP 1530.33 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3112=	DWDM SFP 1531.12 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3190=	DWDM SFP 1531.90 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3268=	DWDM SFP 1532.68 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3425=	DWDM SFP 1534.25 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3504=	DWDM SFP 1535.04 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3582=	DWDM SFP 1535.82 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3661=	DWDM SFP 1536.61 nm SFP (100 GHz ITU Grid)

Product Number	Product Description
SFPs for the Catalyst 3750 (continued)	
DWDM-SFP-3819=	DWDM SFP 1538.19 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3898=	DWDM SFP 1538.98 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3977=	DWDM SFP 1539.77 nm SFP (100 GHz ITU Grid)
DWDM-SFP-4056=	DWDM SFP 1540.56 nm SFP (100 GHz ITU Grid)
DWDM-SFP-4214=	DWDM SFP 1542.14 nm SFP (100 GHz ITU Grid)
DWDM-SFP-4294=	DWDM SFP 1542.94 nm SFP (100 GHz ITU Grid)
DWDM-SFP-4373=	DWDM SFP 1543.73 nm SFP (100 GHz ITU Grid)
DWDM-SFP-4453=	DWDM SFP 1544.53 AWG SFP (100 GHz ITU Grid)
XENPAKs for the Catalyst 3750	
C3-XENPAK10GB-LR=	10GBASE-LR XENPAK Module
LC to SC Cables for the Catalyst 3750	
CSS5-CABLX-LCSC=	CSS11500 10-meter Fiber Single Mode LX LC-to-SC Connectors
CSS5-CABSX-LC=	CSS11500 10-meter Fiber Multimode SX LC Connectors
CSS5-CABSX-LCSC=	CSS11500 10-meter Fiber Multimode SX LC-to-SC Connectors
Right Angle Power Cords for the Catalyst 3750	
CAB-AC-RA=	Power Cord, Right Angle
CAB-AC-RA	Power Cord, 110V, Right Angle
CAB-ACA-RA=	Power Cord, Australia, Right Angle
CAB-ACC-RA=	Power Cord, China, Right Angle
CAB-ACE-RA=	Power Cord, Europe, Right Angle
CAB-ACI-RA=	Power Cord, Italy, Right Angle
CAB-ACR-RA=	Power Cord, Argentina, Right Angle
CAB-ACS-RA=	Power Cord, Switzerland, Right Angle
CAB-ACU-RA=	Power Cord, UK, Right Angle
CAB-JPN-RA=	Power Cord, Japan, Right Angle
CAB-JPN-RA	Power Cord, Japan, Right Angle
RPS for the Catalyst 3750	
PWR675-AC-RPS-N1=	675W Redundant Power Supply with 1 Connector Cable
CAB-RPS-1614=	1 RPS 675 Connector Cable 16/14
CAB-16AWG-AC	AC Power Cord, 16 AWG
CAB-16AWG-AC=	AC Power Cord, 16 AWG

Product Overview (continued)

Product Number	Product Description
Spare Rack Mount Kits for the Catalyst 3750	
RCKMNT-1RU=	1-RU Rack Mount Kit for 3750, 3560, 3550, 2900-LRE-XL
RCKMNT-3550-15RU=	1.5-RU Rack Mount Kit for 3550
RCKMNT-REC-15RU=	Recessed 1.5-RU Rack Mount For 3550, 3750
RCKMNT-REC-1RU=	Recessed 1-RU Rack Mount For 3550, 3560, 3750

Catalyst 3750 Relicensing for Used Equipment

LL-3750-SMI=	Standard Multilayer SW Image License for 3750 10/100 Models
LL-3750-EMI=	Enhanced Multilayer SW Image License for 3750 10/100 Models
LL-3750G-SMI=	Standard Multilayer SW Image License for 3750 GbE Models
LL-3750G-EMI=	Enhanced Multilayer SW Image License for 3750 GbE Models

Catalyst 3750 Metro Series Switches

ME-C3750-24TE-M	ME 3750 24-port 10/100 + 2SFP + 2 SFP ES (No Power): Standard ME SW Image
ME-C3750-24TE-M=	ME 3750 24-port 10/100 + 2SFP + 2 SFP ES (No Power): Standard ME SW Image
ME3750-ADVIP-LIC	Advanced IP Feature License for 3750 Metro
ME3750-ADVIP-LIC=	Advanced IP Feature License for 3750 Metro
ME3750-IPBASE-LIC	IP Base Feature License For 3750 Metro
ME3750-IPSVC-LIC	IP Services Feature License for 3750 Metro
ME3750-IPSVC-LIC=	IP Services Feature License for 3750 Metro
ME3750-UPGRD-LIC=	ME-3750 Metro IP Services to Advanced IP Upgrade License

Configurable Power Supplies for the Catalyst 3750 Metro

PWR-ME3750-AC	Configurable ME-C3750 AC Power Supply
PWR-ME3750-DC	Configurable ME-C3750 DC Power Supply
PWR-ME3750-AC-R	3750 Metro Redundant AC Power Supply (Configurable)
PWR-ME3750-DC-R	3750 Metro Redundant DC Power Supply (Configurable)

Spare Power Supplies for the Catalyst 3750 Metro

PWR-ME3750-AC=	3750 Metro AC Power Supply (Spare)
PWR-ME3750-DC=	3750 Metro DC Power Supply (Spare)

SFPs for the Catalyst 3750 Metro

GLC-LH-SM=	GbE SFP, LC Connector LX/LH Transceiver
GLC-SX-MM=	GbE SFP, LC Connector SX Transceiver
GLC-T=	1000BASE-T SFP
GLC-ZX-SM=	1000BASE-ZX SFP

Product Number	Product Description
LC to SC Cables for the Catalyst 3750 Metro	
CSS5-CABLX-LCSC=	CSS11500 10-meter Fiber Single Mode LX LC-to-SC Connectors
CSS5-CABSX-LC=	CSS11500 10-meter Fiber Multimode SX LC Connectors
CSS5-CABSX-LCSC=	CSS11500 10-meter Fiber Multimode SX LC-to-SC Connectors

Spare Rack Mount Kits for the Catalyst 3750 Metro

19INCH-BRKT-1RU=	19-inch Brackets for Mounting 1-RU Catalyst Switches
RCKMNT-1RU=	1-RU Rack Mount Kit for 3750, 3560, 3550, 2900-LRE-XL
RCKMNT-REC-1RU=	Recessed 1-RU Rack Mount For 3550, 3560, 3750



Cisco Catalyst 3560-E Series

Fixed-configuration switches combining Gigabit Ethernet connectivity and full PoE for small enterprise LAN access and branch office deployments.

The Cisco Catalyst 3560-E Series is an enterprise-class line of standalone wiring closet switches that ease the deployment of secure converged applications. Combining 10/100/1000 and Power over Ethernet (PoE) configurations with uplinks that easily upgrade from Gigabit Ethernet to 10 Gigabit Ethernet (10GbE), these switches enhance worker productivity by enabling applications such as IP telephony, wireless, and video. Cisco Catalyst 3560-E Series aggregation switches deliver secure non-stop unified network services and versatile connectivity in a one rack-unit (1-RU) form factor for space and power constrained environments, enabling businesses to reduce total cost of ownership while maximizing investment protection.

Key Features

- Cisco TwinGig converter module for migrating uplinks from Gigabit Ethernet to 10 Gigabit Ethernet
- Enhanced PoE support with configurations beyond 15.4 watts of support for all ports
- Industry first portfolio to scale beyond 15.4W per port delivering maximum solution simplicity for 802.11n access point deployments
- Access switch models have modular fan and power supply with externally available backup
- Dual redundant modular power supplies and fans for Cisco Catalyst 3560E-12D and Catalyst 3560E-12SD aggregation switches for nonstop operation
- Multicast routing, IPv6 routing, and access control list (ACL) in hardware
- Out-of-band Ethernet management port along with RS-232 console port

Cisco Catalyst 3560-E Series			
Hardware Features	WS-C3560E-24TD	WS-3560E-48TD	WS-3560E-24PD
Switching Fabric (Gbps)	64	64	64
Maximum Stack Members	0	0	0
Clustering			
Total Bandwidth of Stack (Gbps)	0	0	0
Packets per Second per Box (Mpps)	65.5	65.5	101.2
MAC Addresses Supported	12,000	12,000	12,000
Routes Supported	11,000	11,000	11,000
Onboard Memory (DRAM MB)	128	128	128
10 GbE Density	2	2	2
Gigabit Ethernet GBIC/SFP Density	4	4	4
10 GbE XENPAK/X2 Port Density	2	2	2
10/100/1000 Density	24	48	24
10/100 Density	0	0	0
100BASE-FX Density	0	0	0
Maximum Watt Power Consumption			
265W AC	331	331	331
265W DC	379	379	379
750W AC	882	882	882
1150W AC	1386	1386	1386
300W AC			
300W DC			
PoE: Max. 802.3af Class 3 Devices (15.4W)	24	48	24
PoE: Max. 802.3af Class 2 Devices (73W)	24	48	24
AC/DC Support	AC and DC available	AC and DC available	AC and DC available
Dimensions (H x W x D) Inches	1.73 x 17.5 x 11.8	1.73 x 17.5 x 11.9	1.73 x 17.5 x 11.1
Dimensions (H x W x D) Centimeters	4.4 x 44.5 x 55.2	4.4 x 44.5 x 47	4.4 x 44.5 x 48
Unit Weight Pounds (Kilograms)	179 (8.1)	18.3 (8.3)	18.8 (8.6)

WS-3560E-24PD	WS-3560E-48PD	WS-3560E-48PD-F	WS-3560E-12D	WS-3560E-12SD
64	64	64	128	128
0	0	0	0	0
			Yes, 16 Switches/ Cluster	Yes, 16 Switches/ Cluster
0	0	0	0	0
101.2	101.2	101.2	90	476
12,000	12,000	12,000	12,000	12,000
11,000	11,000	11,000	20,000	11,000
128	128	128	256	128
2	2	2	12	2
4	4	4	24	4
2	2	2	12	2
24	48	48	0	0
0	0	0	0	0
0	0	0	0	0
Maximum Watt Power Consumption				
331	331	331		
379	379	379		
882	882	882		
1386	1386	1386		
			367	367
			370	370
24	48	48	0	0
24	48	48	0	0
AC and DC available	AC and DC available	AC and DC available		
1.73 x 17.5 x 11.1	1.73 x 17.5 x 11.11	1.73 x 17.5 x 21.7	1.75 x 17.5 x 19.5	1.75 x 17.5 x 15
4.4 x 44.5 x 48	4.4 x 44.5 x 49	4.4 x 44.5 x 50	4.45 x 44.5 x 49.5	4.45 x 44.5 x 38.1
18.8 (8.6)	19.2 (8.75)	20.9 (9.5)	23.5 (10.7)	15.5 (7)

Cisco Catalyst 3560-E Series Spotlight

Addition of IP Communications

Cisco Catalyst 3560-E Series PoE models support Cisco IP phones and Cisco Aironet wireless LAN (WLAN) access points, as well as any IEEE 802.3af-compliant end device. The Catalyst 3560-E 24-port and 48-port models can support simultaneous full-powered PoE ports at 15.4 watts (W) for maximum powered device support.

Converged Services

The Catalyst 3560-E Series includes switches that deliver Gigabit Ethernet speed with integrated PoE, supporting both Cisco pre-standard and IEEE 802.3af PoE devices. At speeds of 1000 Mbps, Gigabit Ethernet provides the bandwidth to meet new and evolving network demands, alleviate bottlenecks, and boost performance, while increasing the return on existing infrastructure investments. PoE removes the cost of extending wall power to each IP phone, wireless access point, or other PoE devices.

Integrated Security

With a wide range of security features, businesses can protect important information, keep unauthorized people off the network, prevent malicious viruses and worms from infecting the network, guard privacy, and maintain uninterrupted operation. Cisco Network Admission Control (NAC) helps implement network-wide security policies by validating the security posture of hosts seeking to connect to the network. Cisco Identity-based Network Services (IBNS) prevents unauthorized access and helps ensure that users get only their designated privileges. And features like DHCP Snooping, Dynamic ARP Inspection, and IP Source Guard help prevent against man-in-the-middle attacks.

Software Features

The Cisco Catalyst 3560-E Series is orderable with these feature sets:

- The IP Base feature set includes advanced QoS, security, and basic routing functionality.
- The IP Services feature set provides more enterprise-class features, including advanced hardware-based IP unicast and multicast routing, Virtual Route Forwarding (VRF), and policy-based routing (PBR).

Upgrades

- The IP Advanced Services software license can be purchased separately to enable IPv6 routing.

Simplified Management

Available for the Catalyst 3560-E Series, Cisco Network Assistant is a centralized management application that simplifies the administration task of Cisco switches, routers, and wireless access points. Free of charge, Cisco Network Assistant provides configuration wizards that greatly simplify the implementation of converged networks and intelligent network services.

Product Overview

Product Number	Product Description
Catalyst 3560-E Series 10/100/1000 GbE, 10GbE Workgroup Switch	
WS-C3560E-24TD-S	3560-E 24-port 10/100/1000 + 2 10GbE (X2), 265W, IPB S/W
WS-C3560E-24TD-E	3560-E 24-port 10/100/1000 + 2 10GbE (X2), 265W, IPS S/W
WS-C3560E-48TD-S	3560-E 48-port 10/100/1000 + 2 10GbE (X2), 265W, IPB S/W
WS-C3560E-48TD-E	3560-E 48-port 10/100/1000 + 2 10GbE (X2), 265W, IPS S/W
WS-C3560E-24PD-S	3560-E 24-port 10/100/1000 PoE + 2 10GbE (X2), 750W, IPB S/W
WS-C3560E-24PD-E	3560-E 24 10/100/1000 PoE + 2 10GbE (X2), 750W, IPS S/W
WS-C3560E-48PD-S	3560-E 48 10/100/1000 PoE + 2 10GbE (X2), 750W, IPB S/W
WS-C3560E-48PD-E	3560-E 48 10/100/1000 PoE + 2 10GbE (X2), 750W, IPS S/W
WS-C3560E-48PD-SF	3560-E 48 10/100/1000 PoE + 2 10GbE (X2), 1150W, IPB S/W
WS-C3560E-48PD-EF	3560-E 48 10/100/1000 PoE + 2 10GbE (X2), 1150W, IPS S/W
GLC-GE-100FX=	100FX SFP on GbE SFP Ports for DSBU Switches
GLC-FE-100FX	100BASE-FX SFP for FE Port
GLC-LH-SM=	GbE SFP LC Connector LX/LH Transceiver
GLC-SX-MM=	GbE SFP LC Connector SX Transceiver
GLC-FE-100LX	100BASE-LX SFP for FE Port

Catalyst 3560-E Series Product Activation Keys

3560E-AISK9LCBQTY	Advanced IP Services for 3560 E, Upgrade from IP Base
3560E-AISK9LCSQTY	Advanced IP Services for 3560 E, Upgrade from IP Services
3560E-LIC=	Product Activation Key for 3560 E
3560E-IPB-LIC-QTY	IP Base for 3560 E (Default License)
3560E-IPSLCB-QTY	IP Services for 3560 E, Upgrade from the IP Base Feature Set

Power Supplies and Fan Module for the Catalyst 3560-E Series

C3K-BLWR-60CFM=	Fan Module for the 3750-E and 3560-E Series
C3K-PWR-265WAC=	3750-/3560-E 265W AC Power Supply (Spare)
C3K-PWR-265WDC=	3750-E/3560-E 265W DC Power Supply (Spare)
C3K-PWR-750WAC=	3750-E/3560-E/RPS 2300 750W AC Power Supply (Spare)
C3K-PWR-1150WAC=	3750-E/3560-E/RPS 2300 1150W AC Power Supply (Spare)

RPS 2300

PWR-RPS2300	Cisco Redundant Power System 2300 and Blower, No Power Supply
ACC-RPS2300=	Spare Accessory Kit for Cisco Redundant Power System 2300
BLNK-RPS2300	Bay Insert for Cisco Redundant Power System 2300
BLNK-RPS2300=	Spare Bay Insert for Cisco Redundant Power System 2300
CAB-RPS2300	RPS 2300 Cable for Devices Other than E-Series Switches
CAB-RPS2300=	Spare RPS2300 Cable for Devices Other than E-Series Switches

Product Overview (continued)

Product Number	Product Description
RPS 2300 (continued)	
CAB-RPS2300-E	RPS2300 Cable for 3750-E/3560-E Switches
CAB-RPS2300-E=	Spare RPS2300 Cable for 3750-E/3560-E Switches
BLWR-RPS2300=	Spare 45CFM Blower for Cisco Redundant Power System 2300
C3K-PWR-750WAC=	3750-E/3560-E/RPS 2300 750WAC Power Supply (Spare)
C3K-PWR-1150WAC=	3750-E/3560-E/RPS 2300 1150WAC Power Supply (Spare)

TwinGig Converter Module for the Catalyst 3560-E Series

CVR-X2-SFP	Cisco TwinGig Converter Module
CVR-X2-SFP=	Cisco TwinGig Converter Module

SFPs for the Catalyst 3560-E Series

GLC-BX-D=	1000BASE-BX SFP, 1490 nm
GLC-BX-U=	1000BASE-BX SFP, 1310 nm
GLC-GE-100FX=	100FX SFP on GbE SFP Ports for DSBU Switches
GLC-LH-SM=	GbE SFP, LC Connector LX/LH Transceiver
GLC-SX-MM=	GbE SFP, LC Connector SX Transceiver
GLC-T=	1000BASE-T SFP
GLC-ZX-SM=	1000BASE-ZX SFP
CWDM-SFP-1470=	CWDM 1470 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1490=	CWDM 1490 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1510=	CWDM 1510 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1530=	CWDM 1530 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1550=	CWDM 1550 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1570=	CWDM 1570 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1590=	CWDM 1590 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1610=	CWDM 1610 nm SFP Gigabit Ethernet and 1G/2G FC
CAB-SFP-50CM=	3560 SFP Interconnect Cable, 50cm

X2 for Catalyst 3560-E Series

X2-10GB-ER=	10GBASE-ER X2 Module
X2-10GB-LR=	10GBASE-LR X2 Module
X2-10GB-SR=	10GBASE-SR X2 Module
X2-10GB-CX4=	10GBASE-CX4 X2 Module

LC to SC Cables for the Catalyst 3560-E Series

CSS5-CABLX-LCSC=	CSS11500 10-meter Fiber Single Mode LX LC-to-SC Connectors
CSS5-CABSX-LC=	CSS11500 10-meter Fiber Multimode SX LC Connectors
CSS5-CABSX-LCSC=	CSS11500 10-meter Fiber Multimode SX LC-to-SC Connectors

Product Number	Product Description
Power Cords for the Catalyst 3560-E Series	
CAB-AC	Power Cord, US
CAB-AC=	Power Cord, US
CAB-16AWG-AC	Power Cord, 16 AWG
CAB-16AWG-AC=	Power Cord, 16 AWG
CAB-ACA	Power Cord, Australia
CAB-ACA=	Power Cord, Australia
CAB-ACR	Power Cord, Argentina
CAB-ACR=	Power Cord, Argentina
CAB-ACS	Power Cord, Switzerland
CAB-ACS=	Power Cord, Switzerland
CAB-ACU	Power Cord, UK
CAB-ACU=	Power Cord, UK
CAB-JPN=	Power Cord, Japan
CAB-IND=	Power Cord, India
CAB-ACE	Power Cord, Europe
CAB-ACE=	Power Cord, Europe
CAB-ACI	Power Cord, Italy
CAB-ACI=	Power Cord, Italy
CAB-JPN	Power Cord, Japan
CAB-IND	Power Cord, India



Cisco Catalyst 3560 Series

Fixed-configuration switches combining Gigabit Ethernet connectivity and PoE for small enterprise LAN access and branch office deployments.

The Cisco Catalyst 3560 Series combines multilayer Fast Ethernet and Gigabit Ethernet switching with integrated Power over Ethernet (PoE), simplifying the deployment of converged IP telephony, wireless access, video surveillance, and other new applications. The Catalyst 3560 Series is also available in a compact silent PoE model ideal for deployments in office workspaces, classrooms, and other space-constrained environments and enable intelligent services using enterprise-class features outside of the wiring closet.

These standalone, fixed-configuration switches offer up to 48 10/100/1000 ports and support network-wide intelligent services such as advanced quality of service (QoS), rate limiting, access control lists (ACLs), multicast management, and high-performance IP routing.

The Catalyst 3560 Series can be purchased with the IP Base (formerly called SMI) or IP Services (formerly called EMI) licenses, and can be upgraded in the field to Advanced IP Services licenses. The IP Base license offers advanced QoS, rate-limiting, ACLs, and basic routing functionality. The IP Services license provides a richer set of enterprise-class features, including advanced hardware-based IP Unicast and IP Multicast routing as well as Policy-based Routing (PBR). The Advanced IP Services license adds IPv6 routing.

Cisco Catalyst 3560 Series Spotlight

Converged Services

Cisco Catalyst 3560 Series include switches that deliver Gigabit Ethernet speed with integrated PoE, supporting both Cisco pre-standard and IEEE 802.3af PoE devices. At speeds of 1000 Mbps, Gigabit Ethernet provides the bandwidth to meet new and evolving network demands, alleviate bottlenecks, and boost performance, while increasing the return on existing infrastructure investments. PoE removes the cost of extending wall power to each IP phone, wireless access point, or other PoE devices.

Integrated Security

With a wide range of security features, businesses can protect important information, keep unauthorized people off the network, prevent malicious viruses and worms from infecting the network, guard privacy, and maintain uninterrupted operation. Cisco Network Admission Control (NAC) helps implement network-wide security policies by validating the security posture of hosts seeking to connect to the network. Cisco Identity-based Network Services (IBNS) prevents unauthorized access and helps ensure that users get only their designated privileges. And features like DHCP Snooping, Dynamic ARP Inspection, and IP Source Guard help prevent against man-in-the-middle attacks.

Hardware Features

	WS-C3560-24TS	WS-C3560-48TS	WS-C3560-24PS
Switching Fabric (Gbps)	32	32	32
Maximum Stack Members	0	0	0
Clustering	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster
Total Bandwidth of Stack (Gbps)	0	0	0
Packets per Second per Box (Mpps)	6.5	13.1	6.5
MAC Addresses Supported	12,000	12,000	12,000
Routes Supported	11,000	11,000	11,000
Onboard Memory (DRAM MB)	128	128	128
10 GbE Density	0	0	0
Gigabit Ethernet GBIC/SFP Density	2	4	2
10 GbE XENPAK/X2 Port Density	0	0	0
10/100/1000 Density	0	0	0
10/100 Density	24	48	24
100BASE-FX Density	0	0	0
Maximum Watt Power Consumption	45	65	485
PoE: Maximum 802.3af Class 3 Devices (15.4W)	0	0	24
PoE: Maximum 802.3af Class 2 Devices (7.3W)	0	0	24
AC/DC Support	AC only	AC only	AC only
Redundant Power Supply Support	Yes	Yes	Yes
Dimensions (H x W x D) Inches	1.73 x 17.5 x 11.8	1.73 x 17.5 x 11.8	1.73 x 17.5 x 11.8
Dimensions (H x W x D) Centimeters	4.4 x 44.5 x 30.1	4.4 x 44.5 x 30.1	4.4 x 44.5 x 30.1
Unit Weight Pounds (Kilograms)	8.5 (3.9)	9.1 (4.1)	11.3 (5.1)

WS-C3560-48PS	WS-C3560G-24TS	WS-C3560G-48TS	WS-C3560G-24PS	WS-C3560G-48PS	WS-C3560-8PC-S
32	32	32	32	32	32
0	0	0	0	0	0
Yes, 16 Switches/ Cluster					
0	0	0	0	0	0
13.1	38.7	38.7	38.7	38.7	2.7
12,000	12,000	12,000	12,000	12,000	12,000
11,000	11,000	11,000	11,000	11,000	11,000
128	128	128	128	128	128
0	0	0	0	0	0
4	4	4	4	4	1
0	0	0	0	0	0
0	24	48	24	48	1
48	0	0	0	0	8
0	0	0	0	0	0
530	100	160	540	590	204
24	0	0	24	24	8
48	0	0	24	48	8
AC only					
Yes	Yes	Yes	Yes	Yes	No
1.73 x 17.5 x 14.9	1.73 x 17.5 x 14.9	1.73 x 17.5 x 16.1	1.73 x 17.5 x 14.9	1.73 x 17.5 x 16.1	1.73 x 10.6 x 9.1
4.4 x 44.5 x 37.8	4.4 x 44.5 x 37.8	4.4 x 44.5 x 40.9	4.4 x 44.5 x 37.8	4.4 x 44.5 x 40.9	4.4 x 27 x 23
13.2 (6.0)	12 (5.4)	13.5 (6.1)	14 (6.4)	15.5 (7.0)	5 (2.3)

Product Overview

Product Number	Product Description
Catalyst 3560 Series 10/100/1000 Workgroup Switches	
WS-C3560G-48PS-S	3560 48-port 10/100/1000T PoE + 4 SFP, Standard Image
WS-C3560G-48PS-E	3560 48-port 10/100/1000T PoE + 4 SFP, Enhanced Image
WS-C3560G-24PS-S	3560 24-port 10/100/1000T PoE + 4 SFP, Standard Image
WS-C3560G-24PS-E	3560 24-port 10/100/1000T PoE + 4 SFP, Enhanced Image
WS-C3560G-48TS-S	3560 48-port 10/100/1000T + 4 SFP, Standard Image
WS-C3560G-48TS-E	3560 48-port 10/100/1000T + 4 SFP, Enhanced Image
WS-C3560G-24TS-S	3560 24-port 10/100/1000T + 4 SFP, Standard Image
WS-C3560G-24TS-E	3560 24-port 10/100/1000T + 4 SFP, Enhanced Image

Product Number	Product Description
Catalyst 3560 Series 10/100 Workgroup Switches	
WS-C3560-8PC-S	3560 8 10/100 PoE + 1 T/SFP, Standard Image
WS-C3560-48PS-S	3560 48-port 10/100 PoE + 4 SFP, Standard Image
WS-C3560-48PS-E	3560 48-port 10/100 PoE + 4 SFP, Enhanced Image
WS-C3560-24PS-S	3560 24-port 10/100 PoE + 2 SFP, Standard Image
WS-C3560-24PS-E	3560 24-port 10/100 PoE + 2 SFP, Enhanced Image
WS-C3560-48TS-S	3560 48-port 10/100 + 4 SFP, Standard Image
WS-C3560-48TS-E	3560 48-port 10/100 + 4 SFP, Enhanced Image
WS-C3560-24TS-S	3560 24-port 10/100 + 2 SFP, Standard Image
WS-C3560-24TS-E	3560 24-port 10/100 + 2 SFP, Enhanced Image

Product Number	Product Description
IOS Upgrades for the Catalyst 3560	
CD-3560-EMI=	Enhanced Multilayer Image Upgrade for 3560 10/100 Models
CD-3560G-EMI=	Enhanced Multilayer Image upgrade for 3560 GE Models
3560-AISK9-LIC-B=	Advanced IP Services for 3560 FE models with IP Base
3560-AISK9-LIC-S=	Advanced IP Services Upgrade for 3560 FE Models with IP Service
3560G-AISK9-LIC-B=	Advanced IP Services Upgrade for 3560 GE Models with IP Base
3560G-AISK9-LIC-S=	Advanced IP Services Upgrade for 3560 GE Models with IP Service

Product Number	Product Description
SFPs for the Catalyst 3560	
GLC-GE-100FX=	100FX SFP on GbE SFP Ports for DSBU Switches
GLC-LH-SM=	GbE SFP, LC Connector LX/LH Transceiver
GLC-SX-MM=	GbE SFP, LC Connector SX Transceiver
GLC-T=	1000BASE-T SFP
GLC-ZX-SM=	1000BASE-ZX SFP
CWDM-SFP-1470=	CWDM 1470 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1490=	CWDM 1490 nm SFP Gigabit Ethernet and 1G/2G FC

Product Number	Product Description
SFPs for the Catalyst 3560 (continued)	
CWDM-SFP-1510=	CWDM 1510 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1530=	CWDM 1530 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1550=	CWDM 1550 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1570=	CWDM 1570 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1590=	CWDM 1590 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1610=	CWDM 1610 nm SFP Gigabit Ethernet and 1G/2G FC
CAB-SFP-50CM=	3560 SFP Interconnect Cable, 50cm
DWDM-SFP-3033=	DWDM SFP 1530.33 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3112=	DWDM SFP 1531.12 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3190=	DWDM SFP 1531.90 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3268=	DWDM SFP 1532.68 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3425=	DWDM SFP 1534.25 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3504=	DWDM SFP 1535.04 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3582=	DWDM SFP 1535.82 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3661=	DWDM SFP 1536.61 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3819=	DWDM SFP 1538.19 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3898=	DWDM SFP 1538.98 nm SFP (100 GHz ITU Grid)
DWDM-SFP-3977=	DWDM SFP 1539.77 nm SFP (100 GHz ITU Grid)
DWDM-SFP-4056=	DWDM SFP 1540.56 nm SFP (100 GHz ITU Grid)
DWDM-SFP-4214=	DWDM SFP 1542.14 nm SFP (100 GHz ITU Grid)
DWDM-SFP-4294=	DWDM SFP 1542.94 nm SFP (100 GHz ITU Grid)
DWDM-SFP-4373=	DWDM SFP 1543.73 nm SFP (100 GHz ITU Grid)
DWDM-SFP-4453=	DWDM SFP 1544.53 nm SFP (100 GHz ITU Grid)

Product Number	Product Description
LC to SC Cables for the Catalyst 3560	
CSS5-CABLX-LCSC=	CSS11500 10-meter Fiber Single Mode LX LC-to-SC Connectors
CSS5-CABSX-LC=	CSS11500 10-meter Fiber Multimode SX LC Connectors
CSS5-CABSX-LCSC=	CSS11500 10-meter Fiber Multimode SX LC-to-SC Connectors

Product Number	Product Description
Right Angle Power Cords for the Catalyst 3560	
CAB-AC-RA=	Power Cord, 110V, Right Angle
CAB-AC-RA	Power Cord, 110V, Right Angle
CAB-ACA-RA=	Power Cord, Australia, Right Angle
CAB-ACC-RA=	Power Cord, China, Right Angle
CAB-ACE-RA=	Power Cord, Europe, Right Angle
CAB-ACI-RA=	Power Cord, Italy, Right Angle

Product Overview (continued)

Product Number	Product Description
Right Angle Power Cords for the Catalyst 3560 (continued)	
CAB-ACR-RA=	Power Cord, Argentina, Right Angle
CAB-ACS-RA=	Power Cord, Switzerland, Right Angle
CAB-ACU-RA=	Power Cord, UK, Right Angle
CAB-JPN-RA=	Power Cord, Japan, Right Angle
CAB-JPN-RA	Power Cord, Japan, Right Angle
RPS for the Catalyst 3560	
CAB-RPS-1614=	1 RPS 675 Connector Cable 16/14
Spare Rack Mount Kits for the Catalyst 3560	
RCKMNT-1RU=	1-RU Rack Mount Kit for 3750, 3560, 3550, 2900-LRE-XL
RCKMNT-REC-1RU=	Recessed 1-RU Rack Mount for 3550, 3560, 3750
RCKMNT-19-CMPCT=	19-inch Rack Mount for 3560, 2960, ME-3400 Compact Switch
Catalyst 3560 Relicensing for Used Equipment	
LL-3560-SMI=	Standard Multilayer SW Image License for 3560 10/100 Models
LL-3560-EMI=	Enhanced Multilayer SW Image License for 3560 10/100 Models
LL-3560G-SMI=	Standard Multilayer SW Image License for 3560 GbE Models
LL-3560G-EMI=	Enhanced Multilayer SW Image License for 3560 GbE Models
Cable Guard for the Catalyst 3560 Compact Switch	
CBLGRD-C3560-8PC=	Cable Guard for the Catalyst 3560-8PC Compact Switch

Notes



Cisco Catalyst 2960 Series

Fixed-configuration switches offering Fast Ethernet and Gigabit Ethernet connectivity with enhanced LAN services for mid-market and branch office networks. The Catalyst 2960 Series compact silent models are ideal for deployments in office workspaces, classrooms, and other space-constrained environments and enable intelligent services using enterprise-class features outside of the wiring closet.

Cisco Catalyst 2960 Series Intelligent Ethernet switches are offered in two categories:

- Cisco Catalyst 2960 Series with LAN Base Software
- Cisco Catalyst 2960 Series with LAN Lite Software

Cisco Catalyst 2960 Series Switches with LAN Base software are a family of fixed-configuration, standalone intelligent Ethernet devices with Power Over Ethernet (PoE) or non-PoE configurations that provide desktop Fast Ethernet and Gigabit Ethernet connectivity, enabling enhanced LAN services for entry-level enterprise, midmarket, and branch office networks (See Figure 1). The Cisco Catalyst 2960 LAN Base Series offers integrated security, including Network Admission Control (NAC), advanced quality of service (QoS), and resiliency to deliver intelligent services for the network edge.

Cisco® Catalyst® 2960 Series Switches with LAN Lite software are fixed-configuration, standalone switches that provide desktop Fast Ethernet connectivity for entry-level wiring closet and small branch office networks. The Cisco Catalyst 2960 LAN Lite Series Switches simplify the migration from non-intelligent hubs and unmanaged switches to a fully scalable managed network. The LAN Lite Cisco IOS® Software provides entry-level security, quality of service (QoS), and availability capabilities while lowering the network total cost of ownership.

The Catalyst 2960 Series includes four configurations featuring dual-purpose (alternative wired) uplinks for Gigabit Ethernet, allowing the network manager to use either a copper or a fiber uplink. Each dual-purpose uplink offers one 10/100/1000 port and one SFP-based port, with one active at a time. The series includes 24-port and 48-port Gigabit Ethernet switches which drive cost-effective Gigabit to the Desktop (GTTD) across the network.

Cisco Catalyst 2960 Series Spotlight

Gigabit Ethernet

At speeds of 1000 Mbps, Gigabit Ethernet provides the bandwidth to meet new and evolving network demands, alleviate bottlenecks, and boost performance while increasing the return on existing infrastructure investments. Today's workers are placing higher demands on networks by running multiple, concurrent applications. The Catalyst 2960 Series provides a means to intelligently scale the network beyond 100 Mbps over existing Category 5 copper cabling.

Enhanced Security

Security is delivered through a wide range of authentication methods, data encryption technologies, and Network Admission Control (NAC) based on users, ports, and MAC addresses. Through these features, the Catalyst 2960 Series offers security to protect users and devices from attack.

Ease of Management and Configuration

Cisco Network Assistant simplifies configuration, Cisco IOS Software updates, and Troubleshooting. Smartports enable fast and easy configuration of Cisco Catalyst intelligent capabilities; Express setup is quick and easy using the Webpage interface. Enhanced troubleshooting for link connectivity issues and cable diagnostics.

Hardware Features

	WS-C2960G-8TC-L	WS-C2960G-24TC-L	WS-C2960G-48TC-L
LAN Base: Gigabit Ethernet			
Switching Fabric (Gbps)	32	32	32
Maximum Stack Members	0	0	0
Clustering	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster
Total Bandwidth of Stack (Gbps)	N/A	N/A	N/A
Packets per Second per Box (Mpps)	11.9	35.7	39.0
MAC Addresses Supported	8000	8000	8000
Routes Supported	N/A	N/A	N/A
Onboard Memory (DRAM MB)	64	64	64
10 GbE Density	N/A	N/A	N/A
Gigabit Ethernet GBIC/SFP Density	1*	4*	4*
10 GbE XENPAK/X2 Port Density	N/A	N/A	N/A
10/100/1000 Density	8	24	48
10/100 Density	0	0	0
100BASE-FX Density	0	0	0
Maximum Watt Power Consumption	30	75	140
PoE: Maximum 802.3af Class 3 Devices (15.4W)	N/A	N/A	N/A
PoE: Maximum 802.3af Class 2 Devices (7.3W)	N/A	N/A	N/A
AC/DC Support	AC only	AC only	AC only
Redundant Power Supply Support	No	Yes	Yes
Dimensions (H x W x D) Inches	1.73 x 10.6 x 8.1	1.73 x 17.5 x 12.9	1.73 x 17.5 x 12.9
Dimensions (H x W x D) Centimeters	4.4 x 27 x 20.5	4.4 x 44.5 x 32.8	4.4 x 44.5 x 32.8
Unit Weight Pounds (Kilograms)	3 (1.4)	10 (4.5)	12 (5.4)

*Dual purpose uplinks, only one SFP port or one 10/100/1000 BT port is active at any one time.

Hardware Features (continued)

	WS-C2960PD-8TT-L	WS-C2960-8TC-L	WS-C2960-24TT-L
LAN Base: Fast Ethernet			
Switching Fabric (Gbps)	16	16	16
Maximum Stack Members	0	0	0
Clustering	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster
Total Bandwidth of Stack (Gbps)	N/A	N/A	N/A
Packets per Second per Box (Mpps)	2.7	2.7	6.5
MAC Addresses Supported	8000	8000	8000
Routes Supported	N/A	N/A	N/A
Onboard Memory (DRAM MB)	64	64	64
10 GbE Density	N/A	N/A	N/A
Gigabit Ethernet GBIC/SFP Density	0	1*	0
10 GbE XENPAK/X2 Port Density	N/A	N/A	N/A
10/100/1000 Density	1	1	2
10/100 Density	8	8	24
100BASE-FX Density	0	0	0
Maximum Watt Power Consumption	11	20	30
PoE: Maximum 802.3af Class 3 Devices (15.4W)	N/A	N/A	N/A
PoE: Maximum 802.3af Class 2 Devices (7.3W)	N/A	N/A	N/A
AC/DC Support	PoE Input or AC Adapter	AC only	AC only
Redundant Power Supply Support	No	No	Yes
Dimensions (H x W x D) Inches	1.73 x 10.6 x 6.2	1.73 x 10.6 x 6.4	1.73 x 17.5 x 9.3
Dimensions (H x W x D) Centimeters	4.4 x 27 x 15.7	4.4 x 27 x 16.3	4.4 x 44.5 x 23.6
Unit Weight Pounds (Kilograms)	3 (1.4)	3 (1.4)	8 (3.6)

WS-C2960-24LT-L	WS-C2960-24TC-L	WS-C2960-24PC-L	WS-C2960-48TT-L	WS-C2960-48TC-L
16	16	16	16	16
0	0	0	0	0
Yes, 16 Switches/Cluster				
N/A	N/A	N/A	N/A	N/A
6.5	6.5	6.5	10.1	10.1
8000	8000	8000	8000	8000
N/A	N/A	N/A	N/A	N/A
64	64	64	64	64
N/A	N/A	N/A	N/A	N/A
0	2*	2*	0	2*
N/A	N/A	N/A	N/A	N/A
2	2	2	2	2
24	24	24	48	48
0	0	0	0	0
175	30	470	45	45
8	N/A	24	N/A	N/A
8	N/A	24	N/A	N/A
AC only				
Yes	Yes	Yes	Yes	Yes
1.73 x 17.5 x 13	1.73 x 17.5 x 9.3	1.73 x 17.5 x 13	1.73 x 17.5 x 9.3	1.73 x 17.5 x 9.3
4.4 x 44.5 x 33.2	4.4 x 44.5 x 23.6	4.4 x 44.5 x 33.2	4.4 x 44.5 x 23.6	4.4 x 44.5 x 23.6
10 (4.5)	8 (3.6)	12 (5.4)	8 (3.6)	8 (3.6)

*Dual purpose uplinks, only one SFP port or one 10/100/1000 BT port is active at any one time.

Hardware Features (continued)

	WS-C2960-8TC-S	WS-C2960-24-S
LAN Lite		
Switching Fabric (Gbps)	16	16
Maximum Stack Members	0	0
Clustering	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster
Total Bandwidth of Stack (Gbps)	N/A	N/A
Packets per Second per Box (Mpps)	2.7	3.6
MAC Addresses Supported	8000	8000
Routes Supported	N/A	N/A
Onboard Memory (DRAM MB)	64	64
10 GbE Density	N/A	N/A
Gigabit Ethernet GBIC/SFP Density	1*	0
10 GbE XENPAK/X2 Port Density	N/A	N/A
10/100/1000 Density	1	0
10/100 Density	8	24
100BASE-FX Density	0	0
Maximum Watt Power Consumption	20	30
PoE: Maximum 802.3af Class 3 Devices (15.4W)	N/A	N/A
PoE: Maximum 802.3af Class 2 Devices (7.3W)	N/A	N/A
AC/DC Support	AC only	AC only
Redundant Power Supply Support	No	No
Dimensions (H x W x D) Inches	1.73 x 10.6 x 6.4	1.73 x 17.5 x 9.3
Dimensions (H x W x D) Centimeters	4.4 x 27 x 16.3	4.4 x 44.5 x 23.6
Unit Weight Pounds (Kilograms)	3 (1.4)	8 (3.6)

	WS-C2960-24TC-S	WS-C2960-48TT-S	WS-C2960-48TC-S
Switching Fabric (Gbps)	16	16	16
Maximum Stack Members	0	0	0
Clustering	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster
Total Bandwidth of Stack (Gbps)	N/A	N/A	N/A
Packets per Second per Box (Mpps)	6.5	10.1	10.1
MAC Addresses Supported	8000	8000	8000
Routes Supported	N/A	N/A	N/A
Onboard Memory (DRAM MB)	64	64	64
10 GbE Density	N/A	N/A	N/A
Gigabit Ethernet GBIC/SFP Density	2*	0	2*
10 GbE XENPAK/X2 Port Density	N/A	N/A	N/A
10/100/1000 Density	2	2	2
10/100 Density	24	48	48
100BASE-FX Density	0	0	0
Maximum Watt Power Consumption	30	45	45
PoE: Maximum 802.3af Class 3 Devices (15.4W)	N/A	N/A	N/A
PoE: Maximum 802.3af Class 2 Devices (7.3W)	N/A	N/A	N/A
AC/DC Support	AC only	AC only	AC only
Redundant Power Supply Support	No	No	No
Dimensions (H x W x D) Inches	1.73 x 17.5 x 9.3	1.73 x 17.5 x 9.3	1.73 x 17.5 x 9.3
Dimensions (H x W x D) Centimeters	4.4 x 44.5 x 23.6	4.4 x 44.5 x 23.6	4.4 x 44.5 x 23.6
Unit Weight Pounds (Kilograms)	8 (3.6)	8 (3.6)	8 (3.6)

Product Overview

Product Number	Product Description
Catalyst 2960 Workgroup Switches	
WS-C2960G-48TC-L	Catalyst 2960 48 10/100/1000, 4 T/SFP LAN Base Image
WS-C2960-48TC-L	Catalyst 2960 48 10/100 + 2 T/SFP LAN Base Image
WS-C2960-48TT-L	Catalyst 2960 48 10/100 + 2 1000BT LAN Base Image
WS-C2960G-24TC-L	Catalyst 2960 24 10/100/1000, 4 T/SFP LAN Base Image
WS-C2960-24LT-L	Catalyst 2960 24 10/100 (8 PoE) + 2 1000BT LAN Base Image
WS-C2960-24PC-L	Catalyst 2960 24 10/100 PoE + 2 T/SFP LAN Base Image
WS-C2960-24TC-L	Catalyst 2960 24 10/100 + 2 T/SFP LAN Base Image
WS-C2960-24TT-L	Catalyst 2960 24 10/100 + 2 1000BT LAN Base Image
WS-C2960G-8TC-L	Catalyst 2960 7 10/100/1000 + 1 T/SFP LAN Base Image
WS-C2960-8TC-L	Catalyst 2960 8 10/100 + 1 T/SFP LAN Base Image
WS-C2960PD-8TT-L	Catalyst 2960 Powered Device 8 10/100 + 1 1000BT LAN Base Image
Catalyst 2960 LAN Lite Switches	
WS-C2960-24-S	Catalyst 2960 24 10/100 LAN Lite Image
WS-C2960-24TC-S	Catalyst 2960 24 10/100 + 2 T/SFP LAN Lite Image
WS-C2960-48TC-S	Catalyst 2960 48 10/100 + 2 T/SFP LAN Lite Image
RPS 2300 for the Catalyst 2960 Series	
PWR-RPS2300	Cisco Redundant Power System 2300 and Blower, No Power Supply
ACC-RPS2300=	Spare Accessory Kit for Cisco Redundant Power System 2300
BLNK-RPS2300	Bay Insert for Cisco Redundant Power System 2300
BLNK-RPS2300=	Spare Bay Insert for Cisco Redundant Power System 2300
CAB-RPS2300	RPS 2300 Cable for Devices other than E Series Switches
CAB-RPS2300=	Spare RPS2300 Cable for Devices other than E Series Switches
CAB-RPS2300-E	RPS2300 Cable for 3750E/3560E/2960 Power Switches
CAB-RPS2300-E=	Spare RPS2300 Cable for 3750E/3560E/2960 Power Switches
BLWR-RPS2300=	Spare 45CFM Blower for Cisco Redundant Power System 2300
C3K-PWR-750WAC=	3750-E/3560-E/RPS 2300 750W AC Power Supply (Spare)
C3K-PWR-1150WAC=	3750-E/3560-E/RPS 2300 1150W AC Power Supply (Spare)
Spare Rack Mount Kits for the Catalyst 2960	
RCKMNT-1RU=	Rack Mount Kit for 1-RU for 3750, 3560, 3550, 2900-LRE-XL, 2960
RCKMNT-REC-1RU=	Recessed 1-RU Rack Mount for 3550, 3560, 3750, 2960
RCKMNT-19-CMPCT=	19-inch Rack Mount for 3560, 2960, ME-3400 Compact Switch
RCKMNT-HPC=	Rack Mount for HPC for Catalyst 3750, 3560, 2960
Right Angle Power Cords for the Catalyst 2960	
CAB-AC-RA=	Power Cord, USA, Right Angle

Product Number	Product Description
Right Angle Power Cords for the Catalyst 2960 continued	
CAB-ACA-RA=	Power Cord, Australia, Right Angle
CAB-ACC-RA=	Power Cord, China, Right Angle
CAB-ACE-RA=	Power Cord, Europe, Right Angle
CAB-ACI-RA=	Power Cord, Italy, Right Angle
CAB-ACR-RA=	Power Cord, Argentina, Right Angle
CAB-ACS-RA=	Power Cord, Switzerland, Right Angle
CAB-ACU-RA=	Power Cord, UK, Right Angle
CAB-JPN-RA=	Power Cord, Japan, Right Angle
SFPs for Catalyst 2960	
GLC-BX-D=	1000BASE-BX SFP, 1490 nm
GLC-BX-U=	1000BASE-BX SFP, 1310 nm
GLC-FE-100BX-D=	100BASE-BX10-D SFP
GLC-FE-100BX-U=	100BASE-BX10-U SFP
GLC-FE-100FX=	100BASE-FX SFP for FE Port
GLC-FE-100LX=	100BASE-LX SFP for FE Port
GLC-GE-100FX=	100BASE-FX SFP for GE SFP Port on 3750, 3560, 2970, 2960
GLC-LH-SM=	GE SFP, LC Connector LX/LH Transceiver
GLC-SX-MM=	GE SFP, LC Connector SX Transceiver
GLC-ZX-SM=	1000BASE-ZX SFP
CWDM-SFP-1470=	CWDM 1470 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1490=	CWDM 1490 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1510=	CWDM 1510 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1530=	CWDM 1530 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1550=	CWDM 1550 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1570=	CWDM 1570 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1590=	CWDM 1590 nm SFP Gigabit Ethernet and 1G/2G FC
CWDM-SFP-1610=	CWDM 1610 nm SFP Gigabit Ethernet and 1G/2G FC
Cable Guard for the Catalyst 2960 Compact Switches	
CBLGRD-C2960-8TC=	Cable Guard for the 2960-8TC Compact Switch
CBLGRD-C2960G-8TC=	Cable Guard for the 2960G-8TC Compact Switch
Catalyst 2960 Relicensing for Used Equipment	
LL-C2960G=	Software License for 2960 Gigabit Ethernet Switches
LL-C2960=	Software License for 2960 Fast Ethernet Switches
Power Adaptor for the Catalyst 2960PD	
PWR-A=	Power Supply In:100-240VAC Out:48VDC 380mA- 2960PD-8TT-



Cisco Catalyst 2940 Series

Compact fixed-configuration switches delivering Fast Ethernet connectivity for workgroup, conference room, and classroom deployments.

The Cisco Catalyst 2940 Series are small, standalone, managed switches with eight Fast Ethernet ports and a single integrated Fast Ethernet or Gigabit Ethernet uplink. These switches are designed for deployments outside the wiring closet in the end-user workspace, such as classrooms or conference rooms.

They feature a durable metal shell, no fan for silent operation, a magnet for easy wall or under-the-desk mounting, a security lock slot to prevent theft, and an available cable guard to lock down cables and help prevent theft. The Catalyst 2940 Series run Cisco IOS Software with comprehensive security and manageability, delivering network intelligence all of the way to the network edge.

Easy to install and manage, built to last, and receiving periodic software updates for life, these switches provide outstanding investment protection and the lowest total cost of ownership in their product class.

In addition, Cisco offers Catalyst 3560 Series and Catalyst 2960 Series Compact Switches which integrate Power over Ethernet, and additional intelligent services into a similar form-factor as the Catalyst 2940 Series. The Catalyst 3560 Series and Catalyst 2960 Series Compact Switches enable services such as Cisco Unified Communications, wireless, and advanced security to be deployed in office workspaces, classrooms, and other space and wiring constrained environments.

Cisco Catalyst 2940 Series Spotlight

Comprehensive Management

The Cisco Catalyst 2940 Series has robust SNMP Management Information Base (MIB) support and is fully manageable by the CiscoWorks suite of network management tools. The Catalyst 2940 Series feature an embedded Graphical User Interface (GUI)-based Device Manager, enabling network managers to quickly and easily configure their switches. With Cisco Network Assistant, a PC-based software application, customers can also simultaneously configure and troubleshoot multiple Cisco Catalyst switches using a standard Web browser. Cisco Network Assistant provides configuration wizards that greatly simplify the

implementation of converged networks and intelligent network services.

Investment Protection

In contrast to low-end unmanaged switches that often have high failure rates and do not stay current with new technologies, the Catalyst 2940 Series is engineered for long-term value. A durable all-metal shell, an exceptionally high meantime between failure (MTBF) of over 70 years, and a Limited Lifetime Warranty all help to ensure that this switch will outlast most deployment time frames.

Finally, the switches provide a smooth migration to Gigabit Ethernet uplinks.

Hardware Features

	WS-C2940-8TT-S	WS-C2940-8TF-S
Forwarding Bandwidth per Box (Gbps)	3.6	3.6
Maximum Stack Members	0	0
Clustering	Yes, 16 Switches/Cluster	Yes, 16 Switches/Cluster
Total Bandwidth of Stack (Gbps)	0	0
Packets per Second per Box (Mpps)	2.7	2.7
MAC Addresses Supported	8192	8192
Routes Supported	0	0
Onboard Memory (DRAM MB)	16	16
10 GbE Density	0	0
Gigabit Ethernet GBIC/SFP Density	0	1
10 GbE XENPAK/X2 Port Density	0	0
10/100/1000 Density	1	0
10/100 Density	8	8
100BASE-FX Density	0	1
Maximum Watt Power Consumption	15	15
PoE: Maximum 802.3af Class 3 Devices (15.4W)	0	0
PoE: Maximum 802.3af Class 2 Devices (7.3W)	0	0
AC/DC Support	AC only	AC only
Redundant Power Supply Support	No	No
Dimensions (H x W x D) Inches	1.55 x 10.6 x 6.42	1.55 x 10.6 x 6.42
Dimensions (H x W x D) Centimeters	3.94 x 26.9 x 16.3	3.94 x 26.9 x 16.3
Unit Weight Pounds (Kilograms)	3 (1.36)	3 (1.36)

Product Overview

Product Number Product Description

Catalyst 2940 Series Workgroup Switches

WS-C2940-8TF-S	Eight 10/100 Ethernet Ports and One 100BASE-FX Ethernet Port
WS-C2940-8TT-S	Eight 10/100 Ethernet Ports and One 10/100/1000 Ethernet Port

Catalyst 2940 Series Accessories

CABLEGUARD-C2940=	Cable Guard for the Catalyst 2940 Series
RACKMOUNT-C2940=	Rack Mount for 2940

SFPs for the Catalyst 2940

GLC-LH-SM=	GbE SFP LC Connector LX/LH Transceiver
GLC-SX-MM=	GbE SFP LC Connector SX Transceiver

MT-RJ to SC or ST Fiber Patch Cables for the Catalyst 2940

CAB-MTRJ-SC-MM-1M=	MT-RJ MM to SC Duplex MM, 1 Meter
CAB-MTRJ-ST-MM-1M=	MT-RJ MM to ST Duplex MM, 1 Meter
CAB-MTRJ-SC-MM-3M=	MT-RJ MM to SC Duplex MM, 3 Meter
CAB-MTRJ-ST-MM-3M=	MT-RJ MM to ST Duplex MM, 3 Meter
CAB-MTRJ-SC-MM-5M=	MT-RJ MM to SC Duplex MM, 5 Meter
CAB-MTRJ-ST-MM-5M=	MT-RJ MM to ST Duplex MM, 5 Meter

Catalyst 2940 Spare Right Angle Power Cords

CAB-AC-RA=	Power Cord, 110V, Right Angle
CAB-AC-RA	Power Cord, 110V, Right Angle
CAB-ACA-RA=	Power Cord, Australia, Right Angle
CAB-ACC-RA=	Power Cord, China, Right Angle
CAB-ACE-RA=	Power Cord, Europe, Right Angle
CAB-ACI-RA=	Power Cord, Italy, Right Angle
CAB-ACR-RA=	Power Cord, Argentina, Right Angle
CAB-ACS-RA=	Power Cord, Switzerland, Right Angle
CAB-ACU-RA=	Power Cord, UK, Right Angle
CAB-JPN-RA=	Power Cord, Japan, Right Angle
CAB-JPN-RA	Power Cord, Japan, Right Angle

Catalyst 2940 Accessories

RACKMOUNT-C2940=	Rack Mount for Catalyst 2940
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Cisco Catalyst Express Series

Cisco-class switches that make advanced network services and IP Communications easy to manage for small and medium sized businesses (SMBs) with up to 250 employees.

The Cisco Catalyst Express Series Switches include the 500 and 520 families. They are fixed-configuration, Layer 2 managed Ethernet switches that provide the reliability, security, scalability, and rich feature set that SMBs need in an affordable, easy-to-use platform.

The Catalyst Express Series offer nonblocking, wire-speed performance that provides a secure network foundation optimized for data, wireless, and voice. Built-in advanced security features help ensure that all devices on the network are protected.

The Catalyst Express can be easily deployed and centrally managed with the Cisco Network Assistant (CNA). This PC based GUI simplifies and streamlines setting up, running, and troubleshooting a network. CNA includes Cisco Smartports technology which suggests recommended settings for all ports. This preset options help ensure mission-critical traffic is prioritized, voice conversations are clear, bandwidth-intensive video traffic does not impact other applications on the network, and your wireless network is secure. Integrated intelligence helps detect device and network problems before they impact your business.

The Catalyst Express Series also offer Power over Ethernet (PoE), reducing the cost and complexity of IP Communications and wireless LAN deployments by supplying power and Ethernet connectivity over the same Category 5 cables. This eliminates the need to provide separate power outlets and cables for wireless access points, closed-circuit TV cameras, and IP phones.

Hardware Features: Cisco Catalyst Express 500 Series

	WS-CE500-24TT
Forwarding Bandwidth per Box (Gbps)	8.8
Maximum Stack Members	0
Clustering	No
Total Bandwidth of Stack (Gbps)	0
Packets per Second per Box (Mpps)	6.6
MAC Addresses Supported	8000
Routes Supported	0
Onboard Memory (DRAM MB)	32
10 GbE Density	0
Gigabit Ethernet GBIC/SFP Density	0
10 GbE XENPAK/X2 Port Density	0
10/100/1000 Density	2
10/100 Density	24
100BASE-FX Density	0
Maximum Watt Power Consumption	30
PoE: Maximum 802.3af Class 3 Devices (15.4W)	0
PoE: Maximum 802.3af Class 2 Devices (7.3W)	0
AC/DC Support	AC only
Redundant Power Supply Support	Yes
Dimensions (H x W x D) Inches	1.73 x 17.5 x 9.9
Dimensions (H x W x D) Centimeters	4.39 x 44.45 x 25.15
Unit Weight in Pounds (Kilograms)	8 (3.7)

	WS-CE500-24LC	WS-CE500-24PC	WS-CE500G-12TC
Forwarding Bandwidth per Box (Gbps)	8.8	8.8	24
Maximum Stack Members	0	0	0
Clustering	No	No	No
Total Bandwidth of Stack (Gbps)	0	0	0
Packets per Second per Box (Mpps)	6.6	6.6	18
MAC Addresses Supported	8000	8000	8000
Routes Supported	0	0	0
Onboard Memory (DRAM MB)	32	32	32
10 GbE Density	0	0	0
Gigabit Ethernet GBIC/SFP Density	2*	2*	4*
10 GbE XENPAK/X2 Port Density	0	0	0
10/100/1000 Density	2*	2*	12
10/100 Density	24	24	0
100BASE-FX Density	0	0	0
Maximum Watt Power Consumption	110	460	45
PoE: Maximum 802.3af Class 3 Devices (15.4W)	4	24	0
PoE: Maximum 802.3af Class 2 Devices (7.3W)	4	24	0
AC/DC Support	AC only	AC only	AC only
Redundant Power Supply Support	Yes	Yes	Yes
Dimensions (H x W x D) Inches	1.73 x 17.5 x 9.9	1.73 x 17.5 x 14.4	1.73 x 17.5 x 9.9
Dimensions (H x W x D) Centimeters	4.39 x 44.45 x 25.15	4.39 x 44.45 x 36.58	4.39 x 44.45 x 25.15
Unit Weight in Pounds (Kilograms)	8 (3.7)	12 (5.5)	8 (3.7)

*Dual purpose uplinks, only one SFP port or one 10/100/1000 BT port is active at any one time.

Hardware Features: Cisco Catalyst Express 520 Series

	WS-CE520-24TT-K9	WS-CE520-24LC-K9
Forwarding Bandwidth per Box (Gbps)	8.8	8.8
Maximum Stack Members	0	0
Total Bandwidth of Stack (Gbps)	0	0
Packets per Second per Box (Mpps)	6.6	6.6
MAC Addresses Supported	8000	8000
Routes Supported	0	0
Onboard Memory (DRAM MB)	64	64
10 GbE Density	0	0
Gigabit Ethernet GBIC/SFP Density	0	2*
10 GbE XENPAK/X2port Density	0	0
10/100/1000 Density	2	2*
10/100 Density	24	24
100BASE-FX Density	0	0
Maximum Watt Power Consumption	30	110
PoE: Max. 802.3af Class 3 Devices (15.4W)	0	4
PoE: Max. 802.3af Class 2 Devices (73W)	0	4
AC/DC Support	AC only	AC only
Dimensions (H x W x D) Inches	1.73 x 17.5 x 9.9	1.73 x 17.5 x 9.9
Dimensions (H x W x D) Centimeters	4.39 x 44.45x 25.15	4.39 x 44.45x 25.15
Unit Weight Pounds (Kilograms)	8 (3.7)	8 (3.7)

	WS-CE520-24PC-K9	WS-CE520G-24TC-K9	WS-CE520-8PC-K9
Forwarding Bandwidth per Box (Gbps)	8.8	24	16
Maximum Stack Members	0	0	0
Total Bandwidth of Stack (Gbps)	0	0	0
Packets per Second per Box (Mpps)	6.6	18	2.7
MAC Addresses Supported	8000	8000	8000
Routes Supported	0	0	0
Onboard Memory (DRAM MB)	64	64	64
10 GbE Density	0	0	0
Gigabit Ethernet GBIC/SFP Density	2*	2*	1
10 GbE XENPAK/X2port Density	0	0	0
10/100/1000 Density	2*	24	0
10/100 Density	24	0	8
100BASE-FX Density	0	0	0
Maximum Watt Power Consumption	460	45	204
PoE: Max. 802.3af Class 3 Devices (15.4W)	24	0	8
PoE: Max. 802.3af Class 2 Devices (73W)	24	0	8
AC/DC Support	AC only	AC only	AC only
Dimensions (H x W x D) Inches	1.73 x 17.5 x 14.4	1.73 x 17.5 x 9.9	1.73 x 10.6 x 9.1
Dimensions (H x W x D) Centimeters	4.39 x 44.45x 36.58	4.39 x 44.45x 25.15	4.4 x 27 x 23
Unit Weight Pounds (Kilograms)	12 (5.5)	8 (3.7)	5 (2.3)

*Dual purpose uplinks, only one SFP port or one 10/100/1000 BT port is active at any one time.

Cisco Catalyst Express 500 Series Spotlight

Simplified Deployments

The Cisco Catalyst Express Series switches are designed for ease-of-use.

The Catalyst Express Series can be configured with its user-friendly GUI—Cisco Network Assistant. Integrated intelligence optimizes the switch at the system level. Optimal configuration for each port can be applied by choosing from 10 preset Cisco Smartports roles. All ports support autonegotiation of port speed and duplex, and all PoE ports can supply up to the IEEE standard maximum of 15.4W simultaneously.

Integrated Security

The Catalyst Express 500 Series offers several layers of security to protect your network, including a choice of three business-optimized levels. Management traffic to and from the GUI device manager can be encrypted with Secure Sockets Layer (SSL). Tight integration with Cisco wireless access points allows businesses to quickly and easily deploy a secure wireless LAN network. With the Cisco Self-Defending Network strategy and Cisco Clean Access solutions, the Catalyst Express Series raises antivirus and overall security protection to the next level.

Product Overview

Product Number	Product Description
Cisco Catalyst Express Series	
WS-CE500-24TT	24 10/100 Ports and 2 10/100/1000BT Uplinks, GUI S/W
WS-CE500-24LC	24 10/100 Ports (4 PoE) + 2 10/100/1000BT or SFP Uplinks, GUI S/W
WS-CE500-24PC	24 10/100 Ports (24PoE) + 2 10/100/1000BT or SFP Uplinks, GUI S/W
WS-CE500G-12TC	8 10/100/1000BT + 4 10/100/1000BT or SFP Uplinks, GUI S/W
Cisco Catalyst Express 520 Series	
WS-CE520-8PC-K9	8 10/100 PoE + 1 GbE Combo Port
WS-CE520-24TT-K9	24 10/100 Ports + 2 10/100/1000BASE-T Ports
WS-CE520-24LC-K9	20 10/100 Ports + 4 10/100 ports with PoE + 2 10/100/1000BASE-T or SFP Ports
WS-CE520-24PC-K9	24 10/100 Ports with PoE + 2 10/100/1000BASE-T or SFP Ports
WS-CE520G-24TC-K9	24 10/100/1000BASE-T Ports + 2 10/100/1000BASE-T or SFP Ports
RPS for Catalyst Express 500 and 520-24PC	
PWR675-AC-RPS-N1=	675W Redundant Power Supply with Connector Cable
CAB-RPS-1614=	RPS 675 Connector Cable 16/14
SFPs for the Catalyst Express Cisco 6506-E Systems	
GLC-GE-100FX=	100FX SFP on GbE SFP Ports for DSBU Switches
GLC-FE-100FX	100BASE-FX SFP for FE Port
GLC-LH-SM=	GbE SFP, LC Connector LX/LH Transceiver
GLC-SX-MM=	GbE SFP, LC Connector SX Transceiver
GLC-FE-100LX	100BASE-LX SFP for FE Port
Right Angle Power Cords for the Catalyst Express	
CAB-AC-RA=	Power Cord, 110V, Right Angle
CAB-AC-RA	Power Cord, 110V, Right Angle

Product Overview (continued)

Product Number	Product Description
Right Angle Power Cords for the Catalyst Express continued	
CAB-ACA-RA=	Power Cord, Australia, Right Angle
CAB-ACC-RA=	Power Cord, China, Right Angle
CAB-ACE-RA=	Power Cord, Europe, Right Angle
CAB-ACI-RA=	Power Cord, Italy, Right Angle
CAB-ACR-RA=	Power Cord, Argentina, Right Angle
CAB-ACS-RA=	Power Cord, Switzerland, Right Angle
CAB-ACU-RA=	Power Cord, UK, Right Angle
CAB-JPN-RA=	Power Cord, Japan, Right Angle
CAB-JPN-RA	Power Cord, Japan, Right Angle
RPS2300 for the Catalyst Express	
PWR-RPS2300	Cisco Redundant Power System 2300 and Blower, No Power Supply
ACC-RPS2300=	Spare Accessory Kit for Cisco Redundant Power System 2300
BLNK-RPS2300	Bay Insert for Cisco Redundant Power System 2300
BLNK-RPS2300=	Spare Bay Insert for Cisco Redundant Power System 2300
CAB-RPS2300	RPS 2300 Cable for Devices other than E-Series Switches
CAB-RPS2300=	Spare RPS2300 Cable for Devices other than E-Series Switches
CAB-RPS2300-E	RPS2300 Cable for 3750E/3560E Switches
CAB-RPS2300-E=	Spare RPS2300 Cable for 3750E/3560E Switches
BLWR-RPS2300=	Spare 45CFM Blower for Cisco Redundant Power System 2300
C3K-PWR-750WAC=	3750-E/3560-E/RPS 2300 750W AC Power Supply (Spare)
C3K-PWR-1150WAC=	3750-E/3560-E/RPS 2300 1150W AC Power Supply (Spare)
Spare Rack Mount Kits for the Catalyst Express	
RCKMNT-CATEXP=	Rack Mount Kit for Catalyst Express

Cisco Optics

Cisco offers a wide variety of pluggable transceiver modules across Cisco switches and router platforms. Cisco pluggable transceivers provide a convenient and cost-effective solution for the adoption of Fast Ethernet, Gigabit Ethernet, and 10 Gigabit Ethernet in data center, campus, metro access, and storage area networks.

Cisco 10 Gigabit Modules

Cisco offers a range of XENPAK, X2, and XFP modules for 10 Gigabit Ethernet (10GbE) deployments. These Cisco transceivers meet Cisco specifications and are compliant with industry standards. Cisco XENPAK, X2, and XFP offer a convenient and cost-effective solution for the adoption of 10GbE in data center, campus, metropolitan area access, and ring networks. XENPAKs are offered for several reaches and transmission media and are supported on the Catalyst 6500, 3750 Series switches, and Cisco 7600 and CRS-1 routers today.

X2s are also offered for several reaches and transmission media and are supported on the Catalyst 4500, 4948-10GE, 3750-E and 3560-E Series switches today. The Cisco XFP Module offers customers a dual rate interface for 10GbE and Packet-over-SONET/SDH (POS) connectivity. XFPs are currently supported on Cisco routers based on Shared Port Adapter (SPA)

Cisco Gigabit Ethernet SFP Modules

Cisco offers a range of GBIC transceivers and Small Form-factor Pluggable (SFP) transceivers for Gigabit Ethernet and Fibre Channel applications. These small, modular optical interface transceivers offer a convenient and cost-effective solution for the adoption of Gigabit Ethernet and Fibre Channel in data center, campus, metropolitan area access and ring networks, and storage area networks.

Cisco Fast Ethernet SFP Modules

Cisco offers a range of Fast Ethernet SFP Interface Transceivers. The product portfolio includes 100BASE-FX 100BASE-LX, and 100BASE-BX SFPs.

- 100BASE-FX: SFP operates on ordinary multimode fiber optic link spans of up to 2 km in length.
- 100BASE-LX: SFP operates on ordinary single-mode fiber optic link spans of up to 10 km in length.
- 100BASE-BX: SFP operates on ordinary single-mode SINGLE STRAND fiber optic link spans of up to 10 km in length. A 100BASE-BX-D and a 100BASE-BX-U SFP is needed for the single strand deployment.

Cisco offers four types of 100M SFP:

- 100M SFP for Fast Ethernet (FE) SFP Port. The SFP product name contains "FE".
- 100M SFP for Gigabit Ethernet SFP Port. The SFP product name contains "GE".

Cisco CWDM Modules

Cisco Course Wave Division Multiplexing (CWDM) Solution allows scalable and easy-to-deploy Gigabit Ethernet (GbE) and Fibre Channel services. The combination of CWDM GBICs and CWDM SFPs and CWDM Optical Add-Drop Modules (OADMs) and Multiplexers enables the design of a flexible and highly available multiservice network.

The Cisco CWDM Solution offers a convenient and cost-effective solution for the adoption of optical Gigabit Ethernet in campus, data center, and metropolitan-area access networks. Cisco CWDM Solution consists of a set of eight different Cisco CWDM GBICs (one for each of the eight different colors or wavelengths), eight different SFPs, a set of eight single wavelength/dual channel OADMs, two four-channel OADM/Multiplexer and an eight-channel Multiplexer along with a CWDM rack-mountable chassis.

Cisco DWDM Transceiver Modules

The Cisco Dense Wave Division Multiplexing (DWDM) XENPAKs allow users to integrate WDM transport directly with Cisco 10GbE switches and routers. The DWDM XENPAKs and DWDM optical filter and amplifier products (Cisco ONS15216 series) enable the design of a flexible and highly available multiservice network. The DWDM XENPAKs support 100GHZ ITU grid and match the 4-skip-1 channel plan of Cisco ONS 100GHZ products. The DWDM XENPAKs can be used for unamplified and amplified designs to transmit up to 320 Gigabits over the same pair of SMF.

The Cisco Dense Wave Division Multiplexing (DWDM) GBICs allow users to integrate WDM transport directly with Cisco Gigabit Ethernet switches and routers. Just like DWDM XENPAK, the DWDM GBICs interoperate with the same ONS equipment. They can be used for unamplified and amplified designs to transmit up to 32 Gigabits over the same pair of SMF.

General Overview		
Cable Type	Copper	MMF
Fast Ethernet (FE)		
Optics Type		100BASE-FX
Maximum Distance		2 km
Form Factor		SFP
Gigabit Ethernet (GbE)		
Optics Type	1000BASE-T	1000BASE-SX
Maximum Distance	100 m	550 m
Form Factor	SFP/GBIC	SFP/GBIC
10 Gigabit Ethernet (10GbE)		
Optics Type	10GBASE-CX4	10GBASE-SR
Maximum Distance	15 m	26 to 300 m
Form Factor	XENPAK/X2	XENPAK/X2

Cisco Optics General Overview		
Cable Type	SMF	SMF
Fast Ethernet (FE)		
Optics Type		
Maximum Distance		
Form Factor		
Gigabit Ethernet (GbE)		
Optics Type		1000BASE-ZX
Maximum Distance		~70 km
Form Factor		SFP/GBIC
10 Gigabit Ethernet (10GbE)		
Optics Type	10GBASE-ER	10GBASE-ZR
Maximum Distance	40 km	~80 km
Form Factor	XENPAK	XENPAK

MMF	SMF	SMF
	100BASE-LX	100BASE-BX-D/U
	10 km	10 km
	SFP	SFP
	1000BASE-LX	1000BASE-BX-D/U
	10 km	10 km
	SFP/GBIC	SFP
10GBASE-LX4	10GBASE-LR	
300 m	10 km	
XENPAK/X2	XENPAK/X2	

SMF	SMF
1000BASE-CWDM	1000BASE-DWDM
~70 to 100 km	~70 to 100 km
SFP/GBIC	GBIC
	10GBASE-DWDM
	~80 km
	XENPAK

Product Overview (continued)

Modular Switches

Model/Series	Description	Catalyst 6500	Catalyst 4500
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Gigabit Ethernet (GbE) (continued)

EWDM-OADM4=	4-channel OADM	.	.
EWDM-OADM2=	2-channel OADM	.	.
EWDM-OA=	Optical Amplifier	.	.

10 Gigabit Ethernet (GbE)

XENPAK-10GB-CX4	10GBASE-CX4 XENPAK Module	.	
XENPAK-10GB-SR	10GBASE-SR XENPAK Module	.	
XENPAK-10GB-ER	10GBASE-ER XENPAK Module	.	
XENPAK-10GB-ER+	10GBASE-ER XENPAK Module (with DOM)		
XENPAK-10GB-LX4	10GBASE-LX4 XENPAK Module	.	
XENPAK-10GB-LR	10GBASE-LR XENPAK Module	.	
XENPAK-10GB-LR+	10GBASE-LR XENPAK Module		
XENPAK-10GB-ZR	10GBASE-ZR XENPAK Module (with DOM)	.	
XENPAK-10GB-LW	10BASE-LW XENPAK Module	.	
C3-XENPAK10GB-LR	10GBASE-LR XENPAK Module for Catalyst 3750	.	
X2-10GB-CX4	10GBASE-CX4 X2 Module	.	.
X2-10GB-ER	10GBASE-ER X2 Module	.	.
X2-10GB-SR	10GBASE-SR X2 Module	.	.
X2-10GB-LR	10GBASE-LR X2 Module	.	.
X2-10GB-LX4	10GBASE-LX4 X2 Module	.	.
DWDM-XENPAK-xx.xx=	10GBASE-DWDM XENPAK xx.xx Wavelength (see datasheet)	.	
WDM-XENPAK-REC=	Receive-only WDM XENPAK	.	

Fixed-Configuration Switches

Catalyst 4900	Catalyst 3750-E	Catalyst 3750	Catalyst 3650-E
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