



# LAN Switching

## LAN Switching Products at a Glance

Product	Features	Page
<b>Catalyst 2900 Series</b>	<ul style="list-style-type: none"> <li>• Fixed-configuration Ethernet switches</li> <li>• Autosensing 48 10/100/1000BASE-T ports and 4 small form-factor pluggable (SFP) ports, providing a total of 52 Gigabit Ethernet ports</li> <li>• Managed</li> </ul>	2-3
<b>Catalyst 2940 Series</b>	<p>Fixed-configuration 10/100 Ethernet switches</p> <ul style="list-style-type: none"> <li>• 8 10/100 ports + 1 10/100/1000BASE-T port (WS-C2940-8TT-S)</li> <li>• 8 10/100 ports + 1 100BASE-FX or SFP port (WS-C2940-8TF-S)</li> <li>• Small form factor (10.6 in. long and 6.4 in. deep) and all metal shell</li> <li>• Silent operation with no fans</li> <li>• Flexible mounting capabilities</li> <li>• Simplified network management through Cisco Cluster Management Suite</li> </ul>	2-4
<b>Catalyst 2950 Series</b>	<p>Fixed-configuration basic and Intelligent Ethernet 10/100 switches</p> <ul style="list-style-type: none"> <li>• 12/24/48 10/100 port managed switches with stackable and standalone models</li> <li>• Flexible uplink options: fixed 100Base FX, fixed 1000BaseT, fixed 1000BaseSX, and GBIC-based ports</li> <li>• Industrial-grade, rugged models (Catalyst 2955) for harsh environment deployments</li> <li>• Wire-speed, high performance switch</li> <li>• Models with the Standard Image software (SI) provide Layer 2 Cisco IOS functionality for basic data, voice, and video services at the edge of the network.</li> <li>• Models with the Enhanced Image software (EI) bring Layer 2-4 intelligent services such as advanced Quality of Service, rate limiting, security filtering and multicast management capabilities</li> <li>• Stackable up to 9 switches with Gigastack GBIC</li> <li>• Simplified network management through Cisco Cluster Management Suite up to 16 fixed configuration Catalyst switches</li> </ul>	2-6
<b>Catalyst 2970 Series</b>	<p>The Cisco Catalyst 2970 Series switches are affordable Gigabit-to-the-desktop Ethernet switches that deliver wire-speed intelligent services for small and medium-sized businesses and enterprise branch offices.</p>	2-10
<b>Catalyst 3500 Series XL</b>	<p>Fixed-configuration Gigabit Ethernet switches</p> <ul style="list-style-type: none"> <li>• 8 GBIC-based ports (3508G XL)</li> <li>• Stackable up to 9 switches with GigaStack GBIC</li> <li>• Cisco Switch Clustering capable</li> <li>• Managed</li> </ul>	2-11
<b>Catalyst 3550 Series</b>	<p>Fixed-configuration Intelligent Ethernet switches in stackable 10/100, inline power, or Gigabit Ethernet configurations</p> <ul style="list-style-type: none"> <li>• Network control and bandwidth optimization via advanced Quality of Service (QoS), granular rate-limiting, Access Control Lists (ACLs), and multicast services</li> <li>• Network security through a wide range of authentication methods, data encryption technologies, and access restriction features based on users, ports, and MAC addresses</li> <li>• Network scalability through advanced routing protocols such as EIGRP, OSPF, BGP, and PIM (requires Enhanced Multilayer Software Image (EMI))</li> <li>• Intelligent adaptability through Cisco Identity Based Networking Services (IBNS) offering greater flexibility and mobility to stratified users</li> </ul>	2-12
<b>Catalyst 3750 Series</b>	<p>Provides the highest levels of resilient stacking via Cisco StackWise™ technology, intelligent 2-15 network services, and Gigabit Ethernet optimization. The following configurations can be interconnected and are stackable up to 9 switches.</p> <ul style="list-style-type: none"> <li>• 24 10/100 ports with or without Power over Ethernet (PoE) and 2 SFP ports</li> <li>• 48 10/100 ports with or without PoE and 4 SFP ports</li> <li>• 24 and 48 10/100/1000 ports with or without PoE and 4 SFP ports</li> <li>• 24 10/100/1000 ports</li> <li>• 16 10/100/1000 ports and 1 10GE XENPAK port</li> <li>• 12 SFP ports</li> </ul>	

Product	Features	Page
<b>Catalyst 4500 Series— Modular Configuration (4503, 4506, 4507R, 4510R)</b>	Modular switch with integrated intelligent L2-L4 services for converged networks in enterprise LAN Access, Layer2/Layer3 distribution, SMB and branch office. <ul style="list-style-type: none"> <li>• Resilient and simple architecture maximizing desktop user</li> <li>• Up to 384 ports of Ethernet, FE or GE over Fiber or Copper</li> <li>• High performance, Layer 2/3/4 switching up to 102 Mpps</li> <li>• Up to 136 Gbps of switching capacity</li> <li>• Advanced network control with predictable performance, granular QoS and advanced security</li> <li>• Web-based Network Management</li> </ul>	2-18
<b>Catalyst 4000 Series— Fixed Configuration (Catalyst 4912G)</b>	High performance fixed Gigabit Ethernet switch with intelligent enterprise Cisco IOS services	2-20
<b>Catalyst 6500 Series</b>	High-performance, multilayer switch with integrated intelligent services for enterprise campus backbones, wiring closets, server aggregation, or internet data centers <ul style="list-style-type: none"> <li>• Up to 1152 10/100 ports and 57710/100/1000 ports, up to 410 high performance Gigabit Ethernet ports, up to 32 10GE ports, multigigabit L4-7 and Security Services such as Firewall, Intrusion Detection and Load Balance</li> <li>• Layer 4-7 services</li> <li>• Up to 720 Gbps of switching capacity and Packet throughput scalable to 425 Mpps IPv4 (200 Mpps IPv6)</li> </ul>	2-21
<b>Catalyst 8500 Series</b>	High-performance, modular, multimedia switch router <ul style="list-style-type: none"> <li>• Wire speed, nonblocking IP, IPX, IP multicast Layer 3 switching</li> <li>• Multiple interface options</li> <li>• Managed</li> </ul>	2-24

## Cisco LAN and MAN Products Port Matrix

	Switches										
	Catalyst 2900	Catalyst 2940	Catalyst 2950	Catalyst 2970	Catalyst 3500 XL	Catalyst 3550	Catalyst 3750	Catalyst 4500	Catalyst 4948	Catalyst 6500	Catalyst 8500
Fixed Ports Only	X										
Fixed and Modular Ports		X	X	X	X	X	X		X		
Modular Ports Only								X		X	X
<b>Ports</b>											
10BASE-T Switched	X	X	X		X	X	X	X	X	X	
10BASE-FL Switched										X	
100BASE-T Switched	X	X	X		X	X	X	X	X	X	X
100BASE-FX Switched		X	X			X	X	X		X	
10/100 Autosensing Switched	X	X	X		X	X	X	X	X	X	X
Gigabit Ethernet	X	X	X	X	X	X	X	X	X	X	X
10/100/1000BaseT				X	X	X	X	X	X	X	
10GE							X	X		X	
ATM										X	X
Integrated Power over Ethernet (PoE)					X	X	X	X		X	
Integrated Server Load Balancing										X	

## Cisco Catalyst 2900 Series



The Cisco Catalyst 2948G-GE-TX Gigabit Ethernet switch offers affordable Gigabit Ethernet connectivity for small and mid-size networks. It enhances network performance and productivity where higher densities of 10/100/1000BASE-T ports are required. The Catalyst 2948G-GE-TX is an affordable solution for delivering Gigabit Ethernet connectivity to the desktop over Category 5 copper cabling.

### Key Features

- Autosensing 48 10/100/1000BASE-T ports and 4 small form-factor pluggable (SFP) ports, providing a total of 52 Gigabit Ethernet ports; 4 SFP ports are wire-speed, and the 48 10/100/1000BASE-T ports can burst to Gigabit Ethernet line rate and share 12 Gbps of capacity (or 6 Gbps full-duplex) into the switching fabric
- All ports can use Cisco Gigabit EtherChannel® or IEEE 802.3ad for high-speed interconnection applications
- Uses the standard IEEE 802.3x flow control (PAUSE frame) mechanism to control Gigabit Ethernet host traffic
- Uses the feature-rich Cisco Catalyst OS software

### Specifications

Feature	Catalyst 2948G-GE-TX
<b>Fixed Ports (connections)</b>	48 Ethernet 10/100/1000BASE-T ports and 4 SFP-based Gigabit Ethernet ports; )
<b>Full-Duplex Capabilities</b>	6 Gbps full-duplex
<b>VLAN Maximum</b>	2000
<b>Flash Memory</b>	16 MB
<b>DRAM Memory</b>	64 MB
<b>Embedded RMON</b>	Statistics, history, alarms, events
<b>Warranty</b>	Limited lifetime hardware warranty
<b>Performance</b>	20 Gbps maximum forwarding bandwidth at Layer 2 switching fabric; Forwarding rate of 29.76 Mpps for 64-byte packets; 64 MB DRAM and 16 MB Flash memory; Configurable up to 16,000 MAC addresses; Configurable maximum transmission unit (MTU) of up to 1522 bytes for bridging on Gigabit Ethernet ports
<b>Connectors and Cabling</b>	10BASE-T ports: RJ-45 connectors, 2-pair Category 3, 4, or 5 unshielded twisted-pair (UTP) cabling; 100BASE-TX ports: RJ-45 connectors, 2-pair Category 5 UTP cabling; 1000BASE-T ports: RJ-45 connectors, 4-pair Category 5 UTP cabling; 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Category 5 UTP cabling; 1000BASE-SX, -LX/LH, -ZX, and CWDM SFP-based ports: LC fiber connectors (single-mode, or multimode fiber); 10/100 management port: RJ-45 connector; Management console port: RJ-45-to-DB9 cable for PC connections
<b>Power Connectors</b>	Customers can provide power to a switch by using either the internal power supply or the Cisco RPS 675. Internal Power Supply Connector: autoranging unit, supports input voltages between 100 and 240 VAC. Use the supplied AC power cord to connect the AC power connector to an AC power outlet; Cisco RPS Connector: optional Cisco RPS 675 that uses AC input and supplies DC output to the switch, offers a 675W RPS that supports up to six external network devices and provides power to one failed device at a time, automatically senses when the internal power supply of a connected device fails and provides power to the failed device, preventing loss of network traffic. Only the Cisco RPS 675 (model PWR675-AC-RPS-N1=) should be attached to the redundant power supply receptacle
<b>RPS</b>	Yes, RPS 675
<b>Indicators</b>	Per-port link status LED; System-status LEDs: system, power, and RPS
<b>Environmental Ranges</b>	Operating temperature: 32 to 113× F (0 to 45× C) Storage temperature: -13 to 158× F (-25 to 70× C) Operating relative humidity: 10 to 85 percent (noncondensing) Operating altitude: Up to 10,000 ft (3049 m) Storage altitude: Up to 15,000 ft (4573 m)
<b>Safety Certifications</b>	UL to UL 60950, Third Edition; C-UL to CAN/CSA C22.2 No. 60950-00, Third Edition; TUV/GS to EN 60950:2000; CB to IEC 60950 with all country deviations; NOM to NOM-019-SCFI; CE Marking
<b>Dimensions (HxWxD)</b>	1.73 x 17.5 x 17 in. (4.39 x 44.5 x 43.1 cm)
<b>Weight</b>	13 lb (5.9 kg)
<b>Electromagnetic Emissions Certifications</b>	FCC Part 15 Class A; EN 55022: 1998 (CISPR22); EN 55024: 1998 (CISPR24); VCCI Class A; AS/NZS 3548 Class A; CE; CNS 13438 Class A; MIC
<b>Telco</b>	CLEI code

## Selected Part Numbers and Ordering Information<sup>1</sup>

### Catalyst 2900 Series Switches

WS-C2948G-GE-TX	48 10/100/1000 ports + 4 SFP ports
PWR675-AC-RPS-N1=	Cisco RPS 675 with one connector cable
CAB-RPS-1614=	1.2-meter cable for Cisco RPS 675 to external device connection
RCKMNT-1RU=	Spare rack mount kit
RCKMNT-REC-1RU=	Recessed spare rack mount kit
GLC-LH-SM=	Gigabit Ethernet SFP, LC connector, LH transceiver
GLC-SX-MM=	Gigabit Ethernet SFP, LC connector, SX transceiver
GLC-ZX-SM=	Gigabit Ethernet SFP, LC connector, ZX transceiver
GLC-T=	Gigabit Ethernet SFP, RJ-45 connector, 10/100/1000BASE-T transceiver
CWDM-SFP-1470= *	Cisco CWDM SFP 1470 nm; Gigabit Ethernet and 1G/2G FC (gray)
CWDM-SFP-1490= *	Cisco CWDM SFP 1490 nm; Gigabit Ethernet and 1G/2G FC (violet)
CWDM-SFP-1510= *	Cisco CWDM SFP 1510 nm; Gigabit Ethernet and 1G/2G FC (blue)
CWDM-SFP-1530= *	Cisco CWDM SFP 1530 nm; Gigabit Ethernet and 1G/2G FC (green)
CWDM-SFP-1550= *	Cisco CWDM SFP 1550 nm; Gigabit Ethernet and 1G/2G FC (yellow)
CWDM-SFP-1570= *	Cisco CWDM SFP 1570 nm; Gigabit Ethernet and 1G/2G FC (orange)
CWDM-SFP-1590= *	Cisco CWDM SFP 1590 nm; Gigabit Ethernet and 1G/2G FC (red)
CWDM-SFP-1610= *	Cisco CWDM SFP 1610 nm; Gigabit Ethernet and 1G/2G FC (brown)
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
CAB-SM-LCSC-1M	1-meter fiber single-mode LC-to-SC connectors
CAB-SM-LCSC-5M	5-meter fiber single-mode LC-to-SC connectors

1. This is only a small subset of all parts available via URL listed under "For More Information." Some parts have restricted access or are not available through distribution channels. Resellers: For latest part number and pricing info, see the *Distribution Product Reference Guide* at: <http://www.cisco.com/dprg> (limited country availability).

### For More Information

See the Catalyst 2900 Web site: <http://www.cisco.com/go/2900>

## Cisco Catalyst 2940 Series

The Cisco Catalyst 2940 series switches are small, standalone, managed switches with eight Fast Ethernet ports and a single integrated Fast Ethernet or Gigabit Ethernet uplink. The switches are designed to be used outside the wiring closet in the end-user workspace, and feature a durable metal shell, no fan for silent operation, easy wall or under-the-desk mounting, a security lock slot to prevent theft, and an available cable guard to secure the Ethernet cables and switch.



### When to Sell

#### Sell This Product

##### Catalyst 2940 Series

#### When a Customer Needs These Features

- Low port density and price with high performance 10/100 Mbps connectivity
- Small size with quiet operation
- Fiber or 10/100/1000BaseT uplink
- Flexible mounting capabilities

### Key Features

- Cisco Cluster Management Suite (CMS) offers superior manageability, ease-of-use and ease-of-deployment and enhanced configuration wizards; Advanced configuration and ongoing management using a console port and supports remote management protocols
- Express Setup is a Web browser utility that allows simple switch setup so that novices can even perform a basic configuration
- Wire-speed performance across all ports
- Deployed in small workgroups environments outside of the wiring closet
- QoS and security based on Layer 2 information

## Specifications

Feature	Catalyst 2940-8TT	Catalyst 2940-8TF
<b>Fixed Ports</b>	8 port 10/100 autosensing & 1 port 10/100/1000	8 port 10/100 autosensing & 1 port 100BASE-FX or 1000BASE-X Small Form-Factor Pluggable
<b>Forwarding Bandwidth</b>	3.6 Gbps	Same as Catalyst 2940-8TT
<b>Forwarding Rate</b>	2.7 Mpps	Same as Catalyst 2940-8TT
<b>Full Duplex Capabilities</b>	All Ports	Same as Catalyst 2940-8TT
<b>VLAN Maximum</b>	4-port-based VLANs	Same as Catalyst 2940-8TT
<b>FEC</b>	Yes	Same as Catalyst 2940-8TT
<b>802.1Q</b>	Yes	Same as Catalyst 2940-8TT
<b>Security</b>	Port Security with MAC aging, Private VLAN Edge, 802.1x, TACACS+, RADIUS	Same as Catalyst 2940-8TT
<b>Multicast</b>	IGMP Snooping	Same as Catalyst 2940-8TT
<b>QoS</b>	802.1p, 4 egress queues, WRR, SPS	Same as Catalyst 2940-8TT
<b>Management Capabilities</b>	SNMP, Telnet, RMON, CiscoWorks, CMS	Same as Catalyst 2940-8TT
<b>Flash Memory</b>	8 MB	Same as Catalyst 2940-8TT
<b>CPU DRAM</b>	16 MB	Same as Catalyst 2940-8TT
<b>Embedded RMON</b>	History, Events, Alarms, Statistics	Same as Catalyst 2940-8TT
<b>Dimensions (HxWxD)</b>	1.55 x 10.6 x 6.42 in. (3.94 x 26.92 x 16.3 cm)	Same as Catalyst 2940-8TT
<b>Weight</b>	3 lb (1.36 kg)	Same as Catalyst 2940-8TT

## Selected Part Numbers and Ordering Information<sup>1</sup>

### Catalyst 2940 Series

WS-C2940-8TF 8 10/100 ports and 1 100BASE-FX or SFP port

WS-C2940-8TT 8 10/100 ports and 1 10/100/1000 port

CABLEGUARD-C2940= Cable Guard secures switch; prevents tampering w/ Ethernet jacks

### Small Form-Factor Pluggable (SFP) Transceivers

GLC-LH-SM= 1000BASE-LX/LH Gigabit Ethernet SFP, LC connector, LH transceiver

GLC-SX-MM= 1000BASE-SX Gigabit Ethernet SFP, LC connector, SX transceiver

### Fiber Patch Cables

CAB-MTRJ-SC-MM-1M= 1-meter, MT-RJ-to-SC multimode cable

CAB-MTRJ-ST-MM-1M= 1-meter, MT-RJ-to-ST multimode cable

CAB-MTRJ-SC-MM-3M= 3-meter, MT-RJ-to-SC multimode cable

CAB-MTRJ-ST-MM-3M= 3-meter, MT-RJ-to-ST multimode cable

CAB-MTRJ-SC-MM-5M= 5-meter, MT-RJ-to-SC multimode cable

CAB-MTRJ-ST-MM-5M= 5-meter, MT-RJ-to-ST multimode cable

### Catalyst 2940 Series Packaged SMARTnet Maintenance 8x5xNBD

CON-SNT-29408TF Packaged SMARTnet 8x5xNBD Maintenance for the Catalyst 2940-8TF

CON-SNT-29408TT Packaged SMARTnet 8x5xNBD Maintenance for the Catalyst 2940-8TT

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## For More Information

See the Catalyst 2940 Web site: <http://www.cisco.com/go/catalyst2940>

## Cisco Catalyst 2950 Series Intelligent Ethernet Switches



The Catalyst 2950 Series with Intelligent Ethernet Switches are fixed-configuration, standalone and stackable models that provide wire-speed Fast Ethernet and Gigabit Ethernet connectivity for small, mid-sized, service provider and industrial networks. When a Catalyst 2950 Switch is combined with a Catalyst 3550 Series Switch, the solution is capable of enabling IP routing from the edge to the core of the network. These Intelligent Ethernet Switches come with Enhanced Image (EI) software configuration only.

In addition to the range of Intelligent Ethernet switches, the Catalyst 2950 Series also includes switches with Standard Image (SI) software configuration only and are standalone, fixed-configuration, managed 10/100 switches with Gigabit uplinks (2950SX-48, 2950T-48, and 2950SX-24 only) providing user connectivity for small to mid-sized networks. These wire-speed desktop switches come with Standard Image (SI) software features and offer Cisco IOS functionality for basic data, video and voice services at the edge of the network.

The Catalyst 2950 Series also includes the Cisco Catalyst 2955T-12, 2955C-12, and 2955S-12. The Cisco Catalyst 2955 are industrial-grade switches providing Fast Ethernet and Gigabit Ethernet connectivity for deployment in harsh environments. It offers a range of copper and fiber uplink options and operates in environments such as industrial networking solutions (industrial Ethernet deployments), intelligent transportation systems (ITSs), and transportation network solutions. It is also suitable for many military and utility market applications where the environmental conditions or suspended solid concentrations exceed the specifications of other commercial switching products.

### When to Sell

#### Sell This Product

##### Catalyst 2950 Series Intelligent Ethernet Switches with Enhanced Image (EI)

##### Catalyst 2950G-48-EI

- Layer 2/3/4 based services: Advanced QoS, Security, High availability and STP enhancements
- Wire-speed performance
- Advanced QoS, Security, High availability and STP enhancements
- Cisco Cluster Management
- Stackable
- GBIC based uplink ports for media flexibility

- Ideal for desktop connectivity
- High Port Density

##### Catalyst 2950G-24-EI

- Ideal for desktop connectivity
- Medium Port Density

##### Catalyst 2950G-24-EI-DC

- Ideal for Telco/DCN environments
- NEBS compliant
- Medium Port Density

##### Catalyst 2950G-12-EI

- Ideal for desktop connectivity
- Low Port density

##### Catalyst 2950T-48

- High port density
- High speed uplink connectivity with 2 fixed 10/100/1000BASE-T ports

##### Catalyst 2950T-24

- High speed uplink connectivity with 2 fixed 10/100/1000BASE-T ports
- Low price per port

##### Catalyst 2950C-24

- High speed uplink connectivity over extended distances with 2 fixed 100BASE-FX connections using MT-RJ connectors
- Low price per port

##### Catalyst 2950 Series with Standard Image (SI)

- Wire speed, high performance switches for delivering 10/100 Mbps speed connectivity to desktop PCs, servers and other systems
- Layer 2-based QoS and Security features
- Cisco Cluster Management
- Ideal for desktop connectivity.

##### Catalyst 2950-12

- Low Port density

**Sell This Product**

**When a Customer Needs These Features**

- Catalyst 2950-24**
- Catalyst 2950SX-48**
- Catalyst 2950SX-24**
- Catalyst 2955 Series with Enhanced Image (EI)**
- Catalyst 2955T-12**
- Catalyst 2955C-12**
- Catalyst 2955S-12**

- Medium port density
- High port density
- High speed uplink connectivity with 2 fixed 1000BASE-SX ports
- High speed uplink connectivity with 2 fixed 1000BASE-SX ports
- Medium port density
- Ideal for harsh network environments
- Rugged: Implements industrial-grade components, a compact form factor, convection cooling, and relay output signaling. Designed to operate at extreme temperatures and under extreme vibration and shock.
- Layer 2/3/4 based services: Advanced QoS, Security, High availability and STP enhancements
- Wire-speed performance
- Twelve 10/100 ports and two 10/100/1000BASE-TX (Copper) uplinks
- Twelve 10/100 ports and two 100BASE-FX (Multimode Fiber) uplinks
- Twelve 10/100 ports and two 100BASE-LX (Singlemode Fiber) uplinks

**Key Features**

- Cisco Cluster Management (CMS) Software offers superior manageability, ease-of-use and ease-of-deployment and enhanced configuration wizards
- Wire-speed performance in connecting end-stations to the LAN
- Provides intelligent services such as advanced quality of service, rate-limiting, security filters, and multicast management, to the network edge-while maintaining the simplicity of traditional LAN switching
- Catalyst 2950: Ideal for small- and mid-sized networks
- Catalyst 2955: Ideal for harsh network environments
- Sophisticated Multicast Management via IGMP Snooping
- Scalability and high availability features
- Support for Cisco Redundant Power System 675 (RPS 675)

**Competitive Products**

- Hewlett Packard: Procurve 2500 /2650
- Nortel: BPS 2000/450T/420T
- 3 Com: Superstack 3300/4300/4400/4400SE/4200 series
- Extreme: Summit 24 e2e3
- Dell: Powerconnect 3024/3048/3248
- Hirschmann
- GarretCom
- Sixnet

**Specifications**

Feature	2950G-48-EI	2950G-24-EI	2950G-24-EI-DC	2950G-12-EI	2950T-24
<b>Fixed Ports</b>	48 port 10/100 autosensing & 2 GBIC-based Gigabit Ethernet ports	24 port 10/100 autosensing & 2 GBIC ports	24 port 10/100 autosensing & 2 GBIC ports and DC Power	12 port 10/100 autosensing & 2 GBIC ports	26-port (24 10/100 autosensing & 2 ports 1000BaseT
<b>Forwarding Bandwidth</b>	13.6 Gbps	8.8 Gbps	8.8Gbps	6.4Gbps	8.8 Gbps
<b>Forwarding Rate</b>	10.1 Mpps	6.6 Mpps	6.6 Mpps	4.8 Mpps	6.6 Mpps
<b>Full-Duplex Capabilities</b>	All Ports	All Ports	All Ports	All Ports	All Ports
<b>VLAN Maximum</b>	250-port-based VLANs	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI
<b>FEC</b>	Yes	Yes	Yes	Yes	Yes
<b>802.1Q</b>	Yes	Yes	Yes	Yes	Yes
<b>Security</b>	Port Security, with MAC aging, Private VLAN Edge, ACL, 802.11x, IBNS, SSH, RADIUS, TACACS+, SNMPv3 (crypto), BPDU Guard, BPDU Scheduling, SPAN for Intrusion Detection, Spanning Tree Root Guard	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI
<b>Multicast</b>	IGMP Snooping, IGMP filtering, Multicast VLAN Registration	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI

<b>QoS</b>	802.1P, 4 egress queues, Weighted Round Robin, Strict Priority Scheduling, Expedite Queuing, Policing, Marking, Layer 3 and 4 Services, Auto QoS	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI
<b>Management Capabilities</b>	Express Setup, SPAN for Intrusion Detection, L2 Trace Route, VLAN 1 minimization, Auto configuration, SNMP, Telnet, RMON, CWSI, (CLI)-based out-of-band, embedded CMS, RSPAN	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI
<b>Software Image</b>	Enhanced Image (EI)	Enhanced Image (EI)	Enhanced Image (EI)	Enhanced Image (EI)	Enhanced Image (EI)
<b>Flash Memory</b>	8 MB	8 MB	8 MB	8 MB	8 MB
<b>CPU DRAM</b>	16 MB	16 MB	16 MB	16 MB	16 MB
<b>Embedded RMON</b>	History, Events, Alarms, Statistics	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI
<b>Dimensions (H x W x D)</b>	1.72 x 17.5 x 13 in.	1.72 x 17.5 x 9.52 in.	1.72 x 17.5 x 9.52 in.	1.72 x 17.5 x 9.52 in.	1.75 x 17.5 x 16 in.
<b>Feature</b>	<b>2950T-48</b>	<b>2950-24</b>	<b>2950-12</b>	<b>2950SX-12</b>	<b>2950SX-48</b>
<b>Fixed Ports</b>	50-port (48 10/100 autosensing & 2 ports 10/100/1000BASE-T) T-12: 2 fixed 10/100/1000BASE-T uplink ports	24-port 10/100 autosensing	12-port 10/100 autosensing	26-port (24 10/100 autosensing & 2 ports 1000BaseSX) C-12: 2 fixed 100BASE-FX multimode uplink ports; S-12: 2 fixed 100BASE-LX single-mode uplink ports	50-port (48 10/100 autosensing & 2 ports 1000BASE-SX) 12 10/100 ports
<b>Forwarding Bandwidth</b>	13.6 Gbps	4.8 Gbps	2.4 Gbps	8.8 Gbps	13.6 Gbps
<b>Forwarding Rate</b>	13.6 Mpps	3.6 Mpps	1.8 Mpps	6.6 Mpps	13.6 Mpps
<b>Full-Duplex Capabilities</b>	All Ports	All Ports	All Ports	All Ports	All Ports
<b>VLAN Maximum</b>	64-port-based VLANs	64-port-based VLANs	64-port-based VLANs	64-port-based VLANs	64-port-based VLANs
<b>FEC</b>	Yes	Yes	Yes	Yes	Yes
<b>802.1Q</b>	Yes	Yes	Yes	Yes	Yes
<b>Security</b>	Port Security, with MAC aging, Private VLAN Edge, 802.11x, RADIUS, TACACS+, BPDU Guard, BPDU Scheduling, SPAN for Intrusion Detection, Spanning Tree Root Guard	Same as 2950T-48	Same as 2950T-48	Same as 2950T-48	Same as 2950T-48
<b>Multicast</b>	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI
<b>QoS</b>	802.1P, 4 egress queues, WRR, Strict Priority Scheduling	Same as 2950T-48	Same as 2950T-48	Same as 2950T-48	Same as 2950T-48
<b>Management Capabilities</b>	Express Setup, SPAN for Intrusion Detection, L2 Trace Route, VLAN 1 minimization, Auto configuration, SNMP, Telnet, RMON, CWSI, (CLI)-based out-of-band, embedded CMS	SNMP, Telnet, RMON, CWSI, (CLI)-based out-of-band, embedded CMS	Same as 2950-24	Same as 2950-24	Same as 2950-24
<b>Software Image</b>	Standard Image (SI)	Standard Image (SI)	Standard Image (SI)	Standard Image (SI)	Standard Image (SI)
<b>Flash Memory</b>	8 MB	8 MB	8 MB	8 MB	8 MB
<b>CPU DRAM</b>	16 MB	16 MB	16 MB	16 MB	16 MB
<b>Embedded RMON</b>	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI	Same as 2950G-48-EI
<b>Dimensions (H x W x D)</b>	1.75 x 17.5 x 13 in.	1.75 x 17.5 x 11.8 in.	1.75 x 17.5 x 9.52 in.	1.75 x 17.5 x 9.52 in.	1.75 x 17.5 x 13 in.



Feature	2950C-24	2955 (T-12,C-12,S-12)
<b>Fixed Ports</b>	26-port (24 10/100 autosensing & 2 ports100BaseFX)	
<b>Forwarding Bandwidth</b>	5.2 Gbps	13.6 Gbps
<b>Forwarding Rate</b>	3.9 Mpps	2 Mpps
<b>Full-Duplex Capabilities</b>	All Ports	All Ports
<b>VLAN Maximum</b>	250-port-based VLANs	250-port-based VLANs
<b>FEC</b>	Yes	Yes
<b>802.1Q</b>	Yes	Yes
<b>Security</b>	Port Security, with MAC aging, Private VLAN Edge, ACL 802.11x, IBNS, SSH, RADIUS, TACACS+, SNMPv3 (crypto), BPDU Guard, BPDU Scheduling, SPAN for Intrusion Detection, Spanning Tree Root Guard	Port Security, with MAC aging, Private VLAN Edge, 802.11x, RADIUS, TACACS+, SNMPv3 (non-crypto)
<b>Multicast</b>	Same as 2950G-48-EI	Same as 2950G-48-EI
<b>QoS</b>	802.1P, 4 egress queues, Weighted Round Robin, Strict Priority Scheduling,	Same As 2950T-48
<b>Management Capabilities</b>	Express Setup, SPAN for Intrusion Detection, L2 Trace Route, VLAN 1 minimization, Auto configuration,SNMP, Telnet, RMON, CWSI, (CLI)-based out-of-band, embedded CMS, RPSAN	Same as 2950-24
<b>Software Image</b>	Enhanced Image (EI)	Enhanced Image (EI)
<b>Flash Memory</b>	8 MB	16 MB
<b>CPU DRAM</b>	16 MB	32 MB
<b>Embedded RMON</b>	Same as Catalyst 2950G-48-EI	Same as Catalyst 2950G-48-EI
<b>Dimensions (H x W x D)</b>	1.75 x 17.5 x 11.8 in.	3.78x8.07x5.03in; connectors facing forward OR 5.03x8.07x3.78in; connectors facing downward

## Selected Part Numbers and Ordering Information<sup>1</sup>

### Catalyst 2950 Series Switches

WS-C2950G-48-EI	Catalyst 2950G-48 switch with 48 10/100 ports and 2 Gigabit Interface Converter (GBIC)-based GE ports, Enhanced Image
WS-C2950G-24-EI	Catalyst 2950G-24 switch with 24 10/100 ports and 2 GBIC ports, Enhanced Image
WS-C2950G-24-EI-DC	Catalyst 2950G-24-DC switch with 24 10/100 ports, 2 GBIC ports and DC Power, Enhanced Image
WS-C2950G-12-EI	Catalyst 2950G-12 switch with 12 10/100 ports and 2 GBIC ports, Enhanced Image
WS-C2950T-24	Catalyst 2950C-24T switch with 24 10/100 ports and two fixed 1000BaseT Uplink ports, Enhanced Image
WS-C2950C-24	Catalyst 2950C-24 switch with 24 10/100 ports and two fixed 100BaseFX Uplink ports, Enhanced Image
WS-C2950SX-48-SI	Catalyst 2950SX-48 switch with 48 10/100 ports and two fixed 1000BASE-SX Uplink ports, Standard Image
WS-C2950T-48-SI	Catalyst 2950T-48 switch with 48 10/100 ports and two fixed 10/100/1000BASE-T Uplink ports, Standard Image
WS-C2950SX-24	Catalyst 2950SX-24 switch with 24 10/00 ports and two fixed 1000BaseSX Uplink ports, Standard Image
WS-C2950-24	Catalyst 2950C-24 switch with 24 10/100 ports, Standard Image
WS-C2950-12	Catalyst 2950-12 switch with 12 10/100 ports, Standard Image

### Gigabit Interface Converters (GBICs)

WS-X3500-XL	GigaStack GBIC Gigabit Ethernet stacking GBIC and 50 cm cable
WS-G5484=	1000BaseSX GBIC short wavelength GBIC (multimode fiber only)
WS-G5486=	1000BaseLX/LH GBIC long wavelength/long haul GBIC (single or multimode fiber)
WS-G5487=	1000BaseZX GBIC extended-reach GBIC (single mode fiber only)
WS-G5483=	1000BaseT GBIC- Gigabit-Ethernet-over-copper GBIC

### Redundant Power System (RPS)

PWR675-AC-RPS-N1=	675W Redundant Power Supply with 1 connector cable
VAB-RPS-1414=	1.2 meter cable for Cisco RPS 300 to external device connection

### Cables/Accessories

CAB-RPS-1614=	1 RPS 675 connector cable 16/14
CAB-GS-50CM	50 centimeter cable for GigaStack GBIC
STK-RACKMOUNT-1RU=	Rack mount kit for 1 RU versions of Catalyst 2950, 3500 XL, 2900 XL, 1900, and FastHub 400 switches

### Packaged SMARTnet 8x5xNBD Maintenance Contract

CON-SNT-PKG3	Packaged SMARTnet 8x5xNBD Maintenance for the Catalyst 2950G-12, 2950-24 and 2950-12
CON-SNT-PKG4	Packaged SMARTnet 8x5xNBD Maintenance for the Catalyst 2950G-24 and 2850G-24-DC
CON-SNT-PKG6	Packaged SMARTnet 8x5xNBD Maintenance for the Catalyst 2950G-48

1. This is only a small subset of all parts available via URL listed under "For More Information." Some parts have restricted access or are not available through distribution channels. Resellers: For latest part number and pricing info, see the *Distribution Product Reference Guide* at: <http://www.cisco.com/dprg> (limited country availability).

## For More Information

See the Catalyst 2950 Series Web site: <http://www.cisco.com/go/catalyst2950>

## Cisco Catalyst 2970 Series

The Cisco Catalyst 2970 Series switches are affordable Gigabit-to-the-desktop Ethernet switches that deliver wire-speed intelligent services for small and medium-sized businesses and enterprise branch offices. Featuring a complete set of intelligent services, the Cisco Catalyst 2970 Series switches can enhance network performance and increase productivity for today's knowledge workers by intelligently scaling beyond 100 Mbps.

## Specifications

Feature	Catalyst 2970
<b>Performance</b>	Forwarding bandwidth: 28 Gbps (Cisco Catalyst 2970G-24TS), 24 Gbps (Cisco Catalyst 2970G24T) Forwarding rate based on 64-byte packets: 38.7 Mpps (Cisco Catalyst 2970G-24TS), 35.7 Mpps (Cisco Catalyst 2970G-24T) 128 MB DRAM and 16 MB flash memory Up to 8000 MAC addresses configurable Up to 1000 IGMP groups and bridging entries configurable Configurable maximum transmission unit (MTU) of up to 9018 bytes (jumbo frames) for bridging on Gigabit Ethernet ports, and up to 1546 bytes for bridging on Fast Ethernet ports
<b>Connectors and cabling</b>	10BASE-T ports: RJ-45 connectors; 2-pair Category 3, 4, or 5 unshielded twisted-pair (UTP) cabling 100BASE-TX ports: RJ-45 connectors; 2-pair Category 5 UTP cabling 1000BASE-T ports: RJ-45 connectors; 2-pair Category 5 UTP cabling 1000BASE-T SFP-based ports: RJ-45 connectors, 2-pair Category 5 UTP cabling 1000BASE-SX, -LX/LH, -ZX, and CWDM SFP-based ports: LC fiber connectors (single-mode or multimode fiber) Management console port: RJ-45-to-DB9 cable for PC connections
<b>Indicators</b>	Per-port status LEDs: link integrity, disabled, activity, speed, and full-duplex indications. System-status LEDs: system, RPS, and bandwidth-utilization indications
<b>Predicted mean time between failure (MTBF)</b>	163,222 hrs (Cisco Catalyst 2970G-24TS) 219,108 hrs (Cisco Catalyst 2970G-24T)
<b>Power connectors</b>	Customers can provide power to a switch by using either the internal power supply or the Cisco RPS 675. The connectors are located at the back of the switch.
<b>Internal Power Supply Connector</b>	Customers can provide power to a switch by using either the internal power supply or the Cisco RPS 675. The connectors are located at the back of the switch. Internal Power Supply Connector <ul style="list-style-type: none"> <li>• The internal power supply is an autoranging unit.</li> <li>• The internal power supply supports input voltages between 100 and 240 VAC.</li> <li>• Use the supplied AC power cord to connect the AC power connector to an AC power outlet.</li> <li>• Cisco RPS 675 Connector</li> <li>• Offers connection for an optional Cisco RPS 675 that uses AC input and supplies DC output to the switch.</li> <li>• Offers a 675 W RPS that supports up to 6 external network devices and provides power to 1 failed device at a time.</li> <li>• Automatically senses when the internal power supply of a connected device fails and provides power to the failed device, preventing loss of network traffic.</li> <li>• Only the Cisco RPS 675 (Model PWR675-AC-RPS-N1=) should be attached to the RPS receptacle.</li> </ul>
<b>Power consumption</b>	165 W (maximum), 563 BTUs per hour (Cisco Catalyst 2970G-24TS) 135 W (maximum), 460 BTUs per hour (Cisco Catalyst 2970G-24T)
<b>AC input voltage/frequency</b>	100 to 127 or 200 to 240 VAC (autoranging), 50 to 60 Hz
<b>DC input voltages</b>	RPS input+12 V at 17 A (Cisco Catalyst 2970G-24TS) +12 V at 13 A (Cisco Catalyst 2970G-24T)
<b>Dimensions (H x W x D)</b>	Cisco Catalyst 2970G-24TS: 2.59 x 17.5 x 11.6 in. (6.58 x 44.5 x 29.5 cm) Cisco Catalyst 2970G-24T: 1.73 x 17.5 x 12.83 in. (4.39 x 44.5 x 32.6 cm)
<b>Weight</b>	Cisco Catalyst 2970G-24TS: 12.5 lb (5.68 kg) Cisco Catalyst 2970G-24T: 10 lb (4.54 kg)

## For More Information

See the Catalyst 2970 Web site: <http://www.cisco.com/go/catalyst2970>

## Cisco Catalyst 3500 Series XL



The Cisco Systems Catalyst 3500 series XL is a scalable line of stackable 10/100 and Gigabit Ethernet switches that delivers premium performance, flexibility, and manageability with unparalleled investment protection. This line of low-cost, high-performance switching solutions provides stackable switching through an independent high-speed stacking bus that preserves valuable desktop ports. Cisco's breakthrough Switch Clustering technology expands the stacking domain beyond a single wiring closet, enabling up to 16 interconnected Catalyst 3750, 3560, 3550, 2950, 3500 XL, 2950, 2900 XL and 1900 switches—regardless of geographic location—to form a flexible, single IP managed network.

### When to Sell

#### Sell This Product

Catalyst 3508G XL

#### When a Customer Needs These Features

- A stackable Gigabit Ethernet switch with eight GBIC-based ports for aggregating a group of Gigabit Ethernet switches and servers through Cisco GigaStack GBICs or standard 1000BASE-X GBICs
- Dedicated, high-speed Gigabit Ethernet performance

### Key Features

- 10.8 Gbps switch fabric, up to 8 Mpps forwarding rate
- Built-in Gigabit Ethernet ports accommodate a range of GBIC transceivers, including the Cisco GigaStack GBIC, 1000BASE-T, 1000BASE-SX and 1000BASE-LX/LH GBICs, and 1000BASE-ZX extended reach GBIC
- Low-cost, 2-port Cisco GigaStack GBIC offers a range of configurable stacking and performance options by delivering 1-Gbps connectivity in a daisy-chained connection or up to 2-Gbps in a dedicated, switch-to-switch connection
- Support for IEEE 802.1p technology for prioritization of mission-critical and time-sensitive application such as voice and telephony traffic

### Competitive Products

- 3Com: SuperStack 3 Switch 3300 and 3900
- Hewlett Packard: ProCurve 2524, 2424M, 4000, and 8000
- Nortel: BayStack 450T and BPS 2000 switches

### Specifications

Feature	Catalyst 3508G XL
<b>Fixed Ports</b>	8-port 1000BASE-X (GBIC)
<b>Modular Slots</b>	None
<b>Backplane</b>	10 Gbps
<b>Stackable</b>	Yes
<b>Full-Duplex</b>	All ports
<b>VLAN Maximum</b>	250 port-based VLANs or ISL/802.1Q trunks
<b>FEC</b>	Yes
<b>Inter-Switch Link</b>	Yes
<b>In-Line Power</b>	No
<b>Management Capabilities</b>	SNMP, Telnet, RMON, CWSI, (CLI)-based out-of-band, embedded Cisco Visual Switch Manager, Web-based interface
<b>Processors</b>	Cisco designed ASICs
<b>Flash Memory</b>	4 MB
<b>CPU DRAM</b>	8 MB
<b>Embedded RMON</b>	History, Events, Alarms, Statistics
<b>Dimensions (HxWxD)</b>	1.75 x 17.5 x 11.8 in

### Selected Part Numbers and Ordering Information<sup>1</sup>

#### Catalyst 3500 Series XL Switches

WS-C3508G-XL-EN

8 1000X GBIC Slots

**Catalyst 3500 Series XL Accessories**

WS-X3500-XL	GigaStack GBIC
WS-G5484=	1000BASE-SX GBIC
WS-G5486=	1000BASE- LX/LH GBIC
WS-G5487=	1000BASE- ZX extended reach GBIC
WS-G5483=	1000BASE-T GBIC

**Catalyst 3500 Series XL Basic Maintenance**

CON-SNT-PKG4	Catalyst 3512 XL SMARTnet 8x5xNBD Maintenance
CON-SNT-PKG5	Catalyst 3524 XL and 3524-PWR XL SMARTnet 8x5xNBD Maintenance
CON-SNT-PKG6	Catalyst 3548 XL SMARTnet 8x5xNBD Maintenance
CON-SNT-PKG9	Catalyst 3508G XL SMARTnet 8x5xNBD Maintenance

1. This is only a small subset of all parts available via URL listed under "For More Information." Some parts have restricted access or are not available through distribution channels. Resellers: For latest part number and pricing info, see the *Distribution Product Reference Guide* at: <http://www.cisco.com/dprg> (limited country availability).

**For More Information**

See the Catalyst 3500 series XL Web site: <http://www.cisco.com/go/3500xl>

**Cisco Catalyst 3550 Series Intelligent Ethernet Switches**

The Cisco Catalyst 3550 Series Intelligent Ethernet Switches is a line of enterprise-class, stackable, multilayer switches that provide high availability, scalability, security and control to enhance the operation of the network. With a range of Fast Ethernet and Gigabit Ethernet configurations, the Catalyst 3550 Series can serve as both a powerful access layer switch for medium enterprise wiring closets and as a backbone switch for small networks. Now customers can deploy network-wide intelligent services, such as advanced quality of service, rate-limiting, Cisco security access control lists, multicast management, and high-performance IP routing—while maintaining the traditional LAN switching.

**When to Sell****Sell This Product****Catalyst 3550 Series****Catalyst 3550-48-EMI  
(Enhanced Multilayer  
Software Image)****Catalyst 3550-48-SMI  
(Standard Multilayer  
Software Image)****Catalyst 3550-24-EMI  
(Enhanced Multilayer  
Software Image)****Catalyst 3550-24-SMI  
(Standard Multilayer  
Software Image)****Catalyst 3550-24PWR-EMI  
(Enhanced Multilayer  
Software Image)****Catalyst 3550-24PWR-SMI  
(Standard Multilayer  
Software Image)****Catalyst 3550-24-DC-SMI  
(Standard Multilayer  
Software Image)****When a Customer Needs These Features**

- Enterprise-class intelligent services such as ACLs, advanced QoS, and rate-limiting (Cisco Cluster Management Suite (CMS) Software)
- Advanced IP routing
- High Port Density
- Ideal as a powerful access layer switch for a medium enterprise wiring closet with routed uplinks
- High Port Density
- Ideal for a powerful access layer switch for a medium enterprise wiring closet
- Basic IP routing
- Advanced IP routing
- Medium Port Density
- Ideal for a powerful access layer switch for a medium enterprise wiring closet with routed uplinks
- Medium Port Density
- Ideal for a powerful access layer switch for a medium enterprise wiring closet
- Basic IP routing
- Advanced IP routing
- Medium Port Density
- Integrated Power over Ethernet to Cisco IP telephones and Cisco wireless LAN access points
- Ideal for a powerful access layer switch for a medium enterprise wiring closet with routed uplinks
- Medium Port Density
- Integrated Power over Ethernet to Cisco IP telephones and Cisco wireless LAN access points
- Ideal for a powerful access layer switch for a medium enterprise wiring closet
- Basic IP routing
- Medium Port Density
- DC powered, NEBS level 3 compliant
- Basic IP routing

**Sell This Product**

**When a Customer Needs These Features**

**Catalyst 3550-24-FX-SMI (Standard Multilayer Software Image)**

- Medium Port Density
- Ideal for 100FX aggregation
- Basic IP routing

**Catalyst 3550-12G**

- High performance IP routing
- Gigabit Ethernet aggregation using fiber
- Ideal for stack aggregation, server aggregation, or as a backbone switch in a mid-sized network

**Catalyst 3550-12T**

- Advanced IP routing
- Gigabit Ethernet aggregation using Category 5 copper cabling
- Ideal for stack aggregation, server aggregation, or as a backbone switch in a mid-sized network

**CD-3550-EMI**

- Advanced IP routing
- EMI upgrade kit for standard versions of the Catalyst 3550-24, 3550-24 PWR, 3550-24-DC, 3550-24-FX, and 3550-48 switches

**Key Features**

- Network control and bandwidth optimization via advanced Quality of Service (QoS), granular rate-limiting, Access Control Lists (ACLs), and multicast services
- Network security through a wide range of authentication methods, data encryption technologies, and access restriction features based on users, ports, and MAC addresses
- Network scalability through advanced routing protocols such as EIGRP, OSPF, BGP, and PIM (requires Enhanced Multilayer Software Image (EMI))
- Intelligent adaptability through Cisco Identity Based Networking Services (IBNS) offering greater flexibility and mobility to stratified users
- Lower Total Cost of Ownership (TCO) for IP Telephony and Wireless LAN deployments through integrated inline power (Catalyst 3550-24 PWR only)
- Easy switch configuration and deployment of advanced services through the embedded Cluster Management Suite (CMS) Software
- Stackable up to 9 switches with the Gigastack GBIC

**Competitive Products**

- Extreme Networks: Summit5i, Summit 24/48, Summit 48i
- Nortel: BPS 2000
- Foundry: FastIron 4802

**Specifications**

Feature	Catalyst				Catalyst		
	Catalyst 3550-48	Catalyst 3550-24	Catalyst 3550-24P WR	Catalyst 3550-12G	Catalyst 3550-12T	Catalyst 3550-24-D C	Catalyst 3550-24-FX
<b>Fixed Ports</b>	48 10/100 ports 2 GBIC-based Gigabit Ethernet ports	24 10/100 ports 2 GBIC-based Gigabit Ethernet ports	24 10/100 ports 2 GBIC-based Gigabit Ethernet ports	10 GBIC-based Gigabit Ethernet ports 2 10/100/1000 ports	10 10/100/1000 ports 2 GBIC-based Gigabit Ethernet ports	24 10/100 ports 2 GBIC-based Gigabit Ethernet port	24 100FX MMF ports 2 GBIC-based Gigabit Ethernet port
<b>Switching Fabric</b>	13.6 Gbps	8.8 Gbps	8.8 Gbps	24 Gbps	24 Gbps	8.8 Gbps	8.8 Gbps
<b>VLAN Maximum</b>	1005	1005	1005	1005	1005	1005	1005
<b>FEC/GEC</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>GBICs</b>	Gigastack, 1000BaseT, SX, LX/LH, ZX, CWDM	Gigastack, 1000BaseT, SX, LX/LH, ZX, CWDM	Gigastack, 1000BaseT, SX, LX/LH, ZX, CWDM	Gigastack, 1000BaseT, SX, LX/LH, ZX, CWDM	Gigastack, 1000BaseT, SX, LX/LH, ZX, CWDM	Gigastack, 1000BaseT, SX, LX/LH, ZX, CWDM	Gigastack, 1000BaseT, SX, LX/LH, ZX, CWDM
<b>802.1Q and ISL</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Pre-Standard POE</b>	No	No	Yes	No	No	No	No
<b>QoS</b>	802.1p, DSCP, 4 egress Queues, WRR, Strict Priority Queuing, WRED	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48
<b>Multicast</b>	IGMP Snooping, PIM (requires EMI), DVMRP (requires EMI), CGMP Server (requires EMI)	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48

Feature	Catalyst 3550-48		Catalyst 3550-24P	Catalyst 3550-12G	Catalyst 3550-12T	Catalyst 3550-24-D	Catalyst 3550-24-FX
	Catalyst 3550-48	3550-24	WR			C	
<b>Management Capabilities</b>	SNMP, Telnet, RMON, Same as Cisco Works, SSHv2, embedded CMS, Express Setup	3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48
<b>Flash Memory</b>	16 MB	16 MB	16 MB	16 MB	16 MB	16 MB	16 MB
<b>CPU DRAM</b>	64 MB	64 MB	64 MB	64 MB	64 MB	64 MB	64 MB
<b>Embedded RMON</b>	History, Events, Alarms, Statistics	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48	Same as 3550-48
<b>Dimensions (H x W x D)</b>	1.75 x 17.5 x 16.3 in.	1.75 x 17.5 x 14.4 in.	1.75 x 17.5 x 17.4 in.	2.63 x 17.5 x 15.9 in.	2.63 x 17.5 x 15.9 in.	1.75 x 17.5 x 14.4 in.	1.75 x 17.5 x 16.3 in.

## Selected Part Numbers and Ordering Information<sup>1</sup>

### Catalyst 3550 Series Intelligent Ethernet Switches

WS-C3550-48-SMI	Catalyst 3550-48 multilayer switch with 48 10/100 ports and 2 GBIC-based Gigabit Ethernet ports; SMI installed
WS-C3550-48-EMI	Catalyst 3550-48 multilayer switch with 48 10/100 ports and 2 GBIC-based Gigabit Ethernet ports; EMI installed
WS-C3550-24-SMI	Catalyst 3550-24 multilayer switch with 24 10/100 ports and 2 GBIC-based Gigabit Ethernet ports; SMI installed
WS-C3550-24-EMI	Catalyst 3550-24 multilayer switch with 24 10/100 ports and 2 GBIC-based Gigabit Ethernet ports; EMI installed
WS-C3550-24PWR-SMI	Catalyst 3550-24 multilayer switch with 24 10/100 ports and 2 GBIC-based Gigabit Ethernet ports; integrated inline power; SMI installed
WS-C3550-24PWR-EMI	Catalyst 3550-24 multilayer switch with 24 10/100 ports and 2 GBIC-based Gigabit Ethernet ports; integrated inline power; EMI installed
WS-C3550-24-DC-SMI	Catalyst 3550-24-DC multiplayer switch with 24 10/100 ports and 2 GBIC-based Gigabit Ethernet ports; SMI installed; DC-powered
WS-C3550-24-FX-SMI	Catalyst 3550-24-FX multilayer switch with 24 100FX multimode fiber ports and 2 GBIC-based Gigabit Ethernet ports; SMI installed
WS-C3550-12G	10 GBIC-based Gigabit Ethernet ports and 2 10/100/1000 ports; EMI installed
WS-C3550-12T	10-10/100/1000BaseT ports and 2 GBIC-based Gigabit Ethernet ports; EMI installed
CD-3550-EMI=	EMI upgrade kit for the standard versions of the Catalyst 3550-24, 3550-48, 3550-24PWR, 3550-24-DC, and 3550-24-FX

### Gigabit Interface Converters (GBICs)

WS-X3500-XL	GigaStack Stacking GBIC and 50 cm cable
WS-G5484=	1000BaseSX GBIC-short wavelength GBIC (multimode fiber only)
WS-G5486=	1000BaseLX/LH GBIC-long wavelength/long haul GBIC (single or multimode fiber)
WS-G5487=	1000BaseZX GBIC-extended reach GBIC (single mode fiber only)
WS-G5483=	1000BaseT GBIC-Gigabit Ethernet over Copper GBIC

### Redundant Power System (RPS)

PWR675-AC-RPS-N1=	675W Redundant Power Supply with 1 connector cable
VAB-RPS-1614=	1.2 meter connector cable for Cisco RPS 675 to external device connection

### Spare Rack Mount Kits for the Catalyst 3550

RCKMNT-3550-1.5RU=	Rack mount kit for the Catalyst 3550-12T and 3550-12G switches
RCKMNT-1RU=	Rack mount kit for the Catalyst 3550-24, 3550-48, 3550-24PWR, 3550-24-DC, and 3550-24-FX switches

### Packaged SMARTnet 8x5xNBD Maintenance Contract for Two-Tier Customers

CON-SNT-PKG9	Packaged SMARTnet 8x5xNBD for the WS-C3550-12T and WS-C3550-12G
CON-SNT-PKG4	Packaged SMARTnet 8x5xNBD for the WS-C3550-24-SMI and WS-C3550-24PWR-SMI
CON-SNT-PKG5	Packaged SMARTnet 8x5xNBD for the WS-C3550-24-DC-SMI
CON-SNT-PKG6	Packaged SMARTnet 8x5xNBD for the WS-C3550-24-EMI, WS-C3550-24PWR-SMI and WS-C3550-48-SMI
CON-SNT-PKG7	Packaged SMARTnet 8x5xNBD for the WS-C3550-48-EMI and WS-C3550-24-FX-SMI

- This is only a small subset of all parts available via URL listed under "For More Information." Some parts have restricted access or are not available through distribution channels. Resellers: For latest part number and pricing info, see the *Distribution Product Reference Guide* at: <http://www.cisco.com/dprg> (limited country availability).

## For More Information

See the Catalyst 3550 Series Web site: <http://www.cisco.com/go/cat3550>

## Cisco Catalyst 3750 Series Ethernet Switches

The Cisco Catalyst 3750 Series switches are an innovative product line that improves LAN operating efficiency by combining industry-leading ease of use and the highest resiliency available for stackable switches. This product series represents the next generation in desktop switches, and features Cisco StackWise™ technology, a 32-Gbps stack interconnect that allows customers to build a unified, highly resilient switching system—one switch at a time.

### When to Sell

#### Sell This Product

##### Catalyst 3750-24TS

For networks requiring low-density access with switch stacking capability, Layer 2+ or L3 features, and 1 or more fiber uplinks.

##### Catalyst 3750-24PS

For networks requiring low-density access with switch stacking capability, Layer 2+ or L3 features, Power over Ethernet (PoE), and 1 or more fiber uplinks.

##### Catalyst 3750-48TS

For networks requiring medium-density access with switch stacking, Layer 2+ or L3 features, and 1 or more fiber uplinks.

##### Catalyst 3750-48PS

For networks requiring medium-density access with switch stacking capability, Layer 2+ or L3 features, Power over Ethernet (PoE), and 1 or more fiber uplinks.

##### Catalyst 3750G-24T

For networks requiring low-density Layer 2+ or L3 Gigabit Ethernet to the desktop (GTTD) or Ethernet aggregation with stacking capability without any uplinks.

##### Catalyst 3750G-24TS-1U

For networks requiring low-density Layer 2+ or L3 GTTD or Ethernet aggregation with stacking capability and fiber uplinks in a 1RU form factor.

##### Catalyst 3750G-24TS

For networks requiring low-density Layer 2+ or L3 GTTD or Ethernet aggregation with stacking capability and fiber uplinks in a 1.5RU form factor.

##### Catalyst 3750G-24PS

For networks requiring low-density Layer 2+ or L3 GTTD or Ethernet aggregation with stacking capability, PoE, and fiber uplinks.

##### Catalyst 3750G-48TS

For networks requiring medium-density Layer 2+ or L3 GTTD or Ethernet aggregation with stacking capability and fiber uplinks.

##### Catalyst 3750G-48PS

For networks requiring medium-density Layer 2+ or L3 GTTD or Ethernet aggregation with stacking capability, PoE, and fiber uplinks.

##### Catalyst 3750G-16TD

For networks requiring low-density L2+ or L3 GTTD or Ethernet aggregation with stacking capability and a 10 GE uplink

##### Catalyst 3750G-12S

For aggregation of wiring closet switches with optical connectivity and stacking

### Key Features

- **Ease of Use**—“Plug-and-Play” Configuration; A working stack is self-managing and self-configuring. When switches are added or removed, the master switch automatically updates all the routing tables to reflect changes. Upgrades are applied universally and simultaneously to all members of the stack.
- **Scalability**—Fast Ethernet to Gigabit Ethernet
- **Mix-and-Match Switch Types**—Pay as You Expand Your Network
- **Availability**—Non-Stop Performance at Layer 2 and Layer 3
- **Smart Multicast**—With Cisco StackWise technology, offers greater efficiency for multicast applications such as video. Each data packet is put on to the backplane only once, which provides more effective support for more data streams.
- **Superior Quality of Service**—Across the Stack and at Wire Speed; Gigabit Ethernet speed with intelligent services; Mechanisms for marking, classification, and scheduling deliver best-in-class performance for data, voice, and video traffic—all at wire speed.
- **Security**—Granular Control for the Access Environment; Supports a comprehensive set of security features for connectivity and access control, including ACLs, authentication, port-level security, and identity-based network services with 802.1x and extensions.
- **Single IP Management**—Many Switches, One Address
- **Jumbo Frames**—Support for High-Demand Applications
- **IPv6 Capable**

## Competitive Products

- Extreme Networks: Summit5i, Summit 24/48, Summit 48i
- Foundry: FastIron 4802
- Nortel: 5510/5520

## Specifications

Feature	Catalyst 3750-24TS	Catalyst 3750-24PS	Catalyst 3750-48TS	Catalyst 3750-48PS	Catalyst 3750G-24T	Catalyst 3750G-24TS
<b>Fixed Ports</b>	24 10/100	24 1/10	48 10/100	48 1/10	24 10/100/1000	24 10/100/1000
<b>Uplinks</b>	2 SFP	2 SFP	4 SFP	4 SFP	0	4 SFP
<b>Switching Fabric</b>	32 Gbps	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>VLAN Maximum</b>	1005	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>FEC/GEC</b>	Yes	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>SFPs</b>	100BaseT, SX, LX/LH, ZX, CWDM, 100BaseFX	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>802.1Q and ISL</b>	Yes	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>PoE (Cisco prestandard and IEEE 802.3af)</b>	No	Yes	No	Yes	No	No
<b>QoS</b>	802.1p, DSCP, 4 egress Queues, SRR, Strict Priority Queuing, WTD	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>Multicast</b>	IGMP Snooping, PIM (requires EMI), DVMRP (requires EMI), CGMP Server (requires EMI)	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>Management Capabilities</b>	SNMP, Telnet, RMON, CWSI, CLI-based out-of-band, Cisco Network Assistant (CAN)	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>Flash Memory</b>	16 MB	16 MB	16 MB	16 MB	16 MB	16 MB
<b>CPU DRAM</b>	128 MB	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>Embedded RMON</b>	History, Events, Alarms, Statistics	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>Dimensions (H x W x D)</b>	1.73 x 17.5 x 11.83 in.	1.73 x 17.5 x 11.83 in.	1.73 x 17.5 x 11.83 in.	1.73 x 17.5 x 14.83 in.	1.73 x 17.5 x 12.83 in.	2.59 x 17.5 x 11.6 in.

### Catalyst

Feature	Catalyst 3750G-24TS-1 U	Catalyst 3750G-24PS	Catalyst 3750G-48TS	Catalyst 3750G-48PS	Catalyst 3750G-16TD	Catalyst 3750G-12S
<b>Fixed Ports</b>	24 10/100/1000	24 10/100/1000	48 10/100/1000	48 10/100/1000	16 10/100/1000	0
<b>Uplinks</b>	4 SFP	4 SFP	4 SFP	4 SFP	1 10GE XENPAK	12 SFP
<b>Switching Fabric</b>	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>VLAN Maximum</b>	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>FEC/GEC</b>	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>SFPs</b>	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>802.1Q and ISL</b>	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>PoE (Cisco prestandard and IEEE 802.3af)</b>	No	Yes	No	Yes	No	No
<b>QoS</b>	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>Multicast</b>	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>Management Capabilities</b>	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>Flash Memory</b>	32 MB	32 MB	32 MB	32 MB	16 MB	16 MB
<b>CPU DRAM</b>	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>Embedded RMON</b>	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS	Same as 3750-24TS
<b>Dimensions (H x W x D)</b>	1.73 x 17.5 x 14.9 in.	1.73 x 17.5 x 14.9 in.	1.73 x 17.5 x 16.1 in.	1.73 x 17.5 x 16.1 in.	1.73 x 17.5 x 16.1 in.	1.73 x 17.5 x 12.83 in.





<b>PWR675-AC-RPS-N1=</b>	Cisco Redundant Power System 675 (RPS 675) with 1 connector cable
<b>CAB-RPS-1614=</b>	1.2 meter cable for Cisco RPS 675 to external device connection
<b>CD-3750G-EMI=</b>	Enhanced Multilayer Software Image (EMI) upgrade kit for standard versions of the Catalyst 3750G-24TS, 3750G-24T, 3750G-24TS-1U, 3750G-24PS, 3750G-12S, and 3750G-16TD switches; Provides advanced IP routing
<b>CD-3750-EMI=</b>	Enhanced Multilayer Software Image (EMI) upgrade kit for standard versions of the Catalyst 3750-48TS, 3750-24TS, 3750-48PS, and 3750-24PS switches; Provides advanced IP routing
<b>CD-3750G-48EMI=</b>	Enhanced Multilayer Software Image (EMI) upgrade kit for standard versions of the Catalyst 3750G-48TS and 3750G-48PS
<b>CAB-STACK-50CM=</b>	Cisco StackWise 50CM Stacking Cable
<b>CAB-STACK-1M=</b>	Cisco StackWise 1M Stacking Cable
<b>CAB-STACK-3M=</b>	Cisco StackWise 3M Stacking Cable
<b>RCKMNT-3550-1.5RU=</b>	Spare rack mount kit for the Catalyst 3750G-24TS
<b>RCKMNT-1RU=</b>	Spare rack mount kit for the Catalyst 3750 1RU switches
<b>RCKMNT-REC-1.5RU=</b>	1.5RU recessed rack mount kit for the Catalyst 2970, 3550, 3750
<b>RCKMNT-REC-1RU=</b>	1RU recessed rack mount kit for the Catalyst 2970, 3550, 3750
<b>GLC-LH-SM=</b>	GE SFP, LC connector LH transceiver
<b>GLC-SX-MM=</b>	GE SFP, LC connector SX transceiver
<b>GLC-ZX-SM=</b>	GE SFP, LC connector ZX transceiver
<b>GLC-T=</b>	GE SFP, RJ45 connector, 10/100/1000BT transceiver
<b>CWDM-SFP-1470=</b>	Cisco CWDM SFP 1470 nm; Gigabit Ethernet and 1G/2G FC (Grey)
<b>CWDM-SFP-1490=</b>	Cisco CWDM SFP 1490 nm; Gigabit Ethernet and 1G/2G FC (Violet)
<b>CWDM-SFP-1510=</b>	Cisco CWDM SFP 1510 nm; Gigabit Ethernet and 1G/2G FC (Blue)
<b>CWDM-SFP-1530=</b>	Cisco CWDM SFP 1530 nm; Gigabit Ethernet and 1G/2G FC (Green)
<b>CWDM-SFP-1550=</b>	Cisco CWDM SFP 1550 nm; Gigabit Ethernet and 1G/2G FC (Yellow)
<b>CWDM-SFP-1570=</b>	Cisco CWDM SFP 1570 nm; Gigabit Ethernet and 1G/2G FC (Orange)
<b>CWDM-SFP-1590=</b>	Cisco CWDM SFP 1590 nm; Gigabit Ethernet and 1G/2G FC (Red)
<b>CWDM-SFP-1610=</b>	Cisco CWDM SFP 1610 nm; Gigabit Ethernet and 1G/2G FC (Brown)
<b>CSS5-CABLX-LCSC=</b>	CSS11500 10-Meter Fiber Single Mode LX LC-to-SC Connectors
<b>CSS5-CABSX-LC=</b>	CSS11500 10-Meter Fiber Multimode SX LC Connectors
<b>CSS5-CABSX-LCSC=</b>	CSS11500 10-Meter Fiber Multimode SX LC-to-SC Connectors
<b>CAB-SM-LCSC-1M</b>	1-Meter Fiber Singlemode LC-to-SC Connectors
<b>CAB-SM-LCSC-5M</b>	5-Meter Fiber Singlemode LC-to-SC Connectors

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## For More Information

See the Catalyst 3750 Series Web site: [www.cisco.com/go/catalyst3750](http://www.cisco.com/go/catalyst3750)

## Cisco Catalyst 4500 Series

The Catalyst 4500 Series includes four Catalyst chassis:

Catalyst 4510R (10-slot: redundant Supervisor capable),

Catalyst 4507R (7-slot: redundant Supervisor capable),

Catalyst 4506 (6-slot) and Catalyst 4503 (3-slot). The Catalyst 4500 extends control to the Enterprise LAN Access, SMB core and Layer 3 aggregation points. A variety of network infrastructure solutions are enabled by the Catalyst 4500 Series including: IP Telephony, Power Over Ethernet, 10/100/1000 to the desktop, Wireless LAN, NetFlow Services and Metro Ethernet Switching.



## When to Sell

### Sell This Product

#### Catalyst 4510R

### When a Customer Needs These Features

- When high performance, port density, and network resiliency is crucial to customer success
- Port density up to 384-10/100, 100-FX, 1000BASE-X or 10/100/1000BASE-T and 2 ports 10 GbE
- Layer 2 and Layer 3 Cisco Express Forwarding (CEF)-based switching up to 136 Gbps, 102 Mpps

#### Catalyst 4507R

- When network resiliency via redundant Supervisor Engines is crucial to customer success
- Port density up to 240-10/100, 100-FX, 1000BASE-X or 10/100/1000BASE-T and 2 ports 10 GbE
- Layer 2 and Layer 3 Cisco Express Forwarding (CEF)-based switching up to 100 Gbps, 72 Mpps

#### Catalyst 4506

- Port density up to 240-10/100, 100-FX, 1000BASE-X or 10/100/1000BASE-T and 2 ports 10 GbE
- Layer 2 and Layer 3 Cisco Express Forwarding (CEF)-based switching up to 100 Gbps, 75 Mpps

**Sell This Product When a Customer Needs These Features**

**Catalyst 4503**

- Port density up to 116-10/100, 100-FX, 1000BASE-X or 10/100/1000BASE-T and 2 ports 10 GbE
- Layer 2 and Layer 3 Cisco Express Forwarding (CEF)-based switching up to 64 Gbps, 48 Mpps

Note: Compatible sparing between Catalyst 4510R, 4507R, 4506, and 4503 chassis provides investment protection with common Supervisor Engines, power supplies and switching line cards.

**Competitive Products**

- Extreme Networks: Alpine 3802, Alpine 3804, and Alpine 3808
- Hewlett Packard: Procurve 5300XL, 4108GL
- Foundry: Fastron 400/800, Fastron II, II+, III
- Nortel: Passport 8100/8300

**Specifications**

Feature	Supervisor II-Plus-TS (WS-X4013+TS)	Supervisor II-Plus (WS-X4013+)	Supervisor IV (WS-X4515)	Supervisor V (WS-X4516)	Supervisor V-10GE (WS-X4516-10GE)
<b>Switching Capacity &amp; Throughput</b>	64 Gbps, 48 Mpps	64 Gbps, 48 Mpps	64 Gbps, 48 Mpps	96 Gbps, 72 Mpps	136 Gbps, 102 Mpps
<b>Multilayer Switching</b>	Basic L2/3/4 Services	Basic L2/3/4 Services	Enhanced L2/3/4 Services & Routing	Enhanced L2/3/4 Services & Routing	Enhanced L2/3/4 Services & Routing
<b>(E)IGRP, OSPF, IS-IS, BGP</b>	No	No	Yes	Yes	Yes
<b>Platform Support</b>	Catalyst 4503 ONLY	Catalyst 4507R, 4506, 4503	Catalyst 4507R, 4506, 4503	Catalyst 4507R, 4506, 4503	Catalyst 4510R, 4507R, 4506, 4503
<b>Supervisor Redundancy</b>	No	4507R Only	4507R Only	4507R and 4510R Only	4507R and 4510R Only
<b>Operating System</b>	IOS	IOS	IOS	IOS	IOS
<b>QoS</b>	4Q/Port, policing, shaping, congestion avoidance	4Q/Port, policing, shaping, congestion avoidance	4Q/Port, policing, shaping, congestion avoidance	4Q/Port, policing, shaping, congestion avoidance	4Q/Port, policing, shaping, congestion avoidance
<b>CPU</b>	266 MHz	266 MHz	333 MHz	400 MHz	800 MHz
<b>NetFlow Support</b>	No	No	Yes (Optional Daughter Card)	Yes (Optional Daughter Card)	Yes (Built-in functionality; no Daughter Card Required)
<b>ISL</b>	Yes	Yes	Yes	Yes	Yes
<b>ACLS</b>	Yes	Yes	Yes	Yes	Yes
<b>IP FIB entries</b>	32K	32K	128K	128K	128K
<b>MAC Addresses</b>	32K Unicast, 16K Multicast	32K Unicast, 16K Multicast	32K Unicast, 16K Multicast	32K Unicast, 16K Multicast	32K Unicast, 16K Multicast
<b>On-Board Flash</b>	32 MB	32 MB	64 MB	64 MB	64 MB
<b>Compact Flash Support</b>	Yes	Yes	Yes	Yes	Yes
<b>Non-Blocking Supervisor Ports</b>	12x10/100/1000 BASET, PoE, 8xSFP	2xGE ports	2xGE ports	2xGE ports	2x10GE or 4xGE on Supervisor V-10GE

Feature	Catalyst 4510R	Catalyst 4507R	Catalyst 4506	Catalyst 4503
<b>Modular Slots</b>	Up to 384 ports; 8 linecard slots	Up to 240 ports; 5 linecard slots	Up to 240 ports; 5 linecards slots	Up to 116 ports; 2 linecard slots
<b>Available Modules</b>	Supervisor Engine V and V-10GE	Supervisor Engine II-Plus IV, V, V-10GE	Supervisor Engine II-Plus IV, V, V-10GE	Supervisor Engine II-Plus-TS, IV, V, V-10GE
<b>Redundant Supervisor Capable</b>	Yes	Yes	No	No
<b>Backplane Capacity</b>	136 Gbps	100 Gbps	100 Gbps	64 Gbps
<b>Stackable</b>	No	No	No	No
<b>Hot-Swappable Power Supplies</b>	Yes	Yes	Yes	Yes
<b>1+1 Power Supply Protection</b>	Yes	Yes	Yes	Yes
<b>Power Over Ethernet (PoE) Support</b>	Up to 15.4W of PoE on every port	Up to 15.4W of PoE on every port	Up to 15.4W of PoE on every port	Up to 15.4W of PoE on every port
<b>Embedded RMON</b>	Statistics, History, Alarm, Events	Statistics, History, Alarm, Events	Statistics, History, Alarm, Events	Statistics, History, Alarm, Events
<b>Dimensions (H x W x D)</b>	24.35 x 17.31 x 12.50 in. (61.84 x 43.97 x 31.70 cm)	19.19 x 17.31 x 12.50 in. (48.74 x 43.97 x 31.70 cm)	17.38 x 17.31 x 12.50 in. (44.13 x 43.97 x 31.70 cm)	12.25 x 17.31 x 12.50 in. (31.12 x 43.97 x 31.70 cm)

## Selected Part Numbers and Ordering Information<sup>1</sup>

### Catalyst 4500 Series Switches

WS-C4510R	Catalyst 4500 Chassis (10-Slot),fan, no p/s, Red Sup Capable
WS-C4507R	Catalyst 4500 Chassis (7-Slot),fan, no p/s, Red Sup Capable
WS-C4506	Catalyst 4500 Chassis (6-Slot),fan, no p/s
WS-C4503	Catalyst 4500 Chassis (3-Slot),fan, no p/s

### Catalyst 4500 Series Common Equipment

WS-X4013=	Catalyst 4500 Supervisor II-Plus, 2GE, RJ-45
WS-X4013+-TS=	Catalyst 4500 Supervisor Engine II-Plus TS (for Catalyst 4503 chassis only)
WS-X4515=	Catalyst 4500 Supervisor IV, 2GE, RJ-45
WS-X4516=	Catalyst 4500 Supervisor V, 2GE, RJ-45
WS-X4516-10GE=	Catalyst 4500 Supervisor V, 2x10GE, RJ-45
WS-F4531=	Catalyst 4500 NetFlow Services card for Supervisor Engine IV/V
PWR-C45-1000AC=	Catalyst 4500 1000W AC Power Supply (Data Only)
PWR-C45-1400AC=	Catalyst 4500 1400W AC Power Supply (Data Only)
PWR-C45-1300ACV=	Catalyst 4500 1300W AC Power Supply (with PoE)
PWR-C45-2800ACV=	Catalyst 4500 2800W AC Power Supply (with PoE)

### Catalyst 4500 Series Line Card Modules and GBICs

WS-X4148-RJ=	Catalyst 4500 10/100 Fast Ethernet Module, 48 Ports (RJ-45)
WS-X4148-RJ21=	Catalyst 4500 Telco switch module, 48-port 10/100 (4xRJ21)
WS-X4232-GB-RJ=	Catalyst 4500 E/FE/GE Module, 2-GE (GBIC), 32-10/100 FE (RJ-45)
WS-X4232-RJ-XX=	Catalyst 4500 FE Base Module, 32-10/100(RJ45)+ Modular Uplink slot
WS-X4302-GB=	Catalyst 4500 Gigabit Ethernet Module, 2-Ports (GBIC)
WS-X4306-GB=	Catalyst 4500 Gigabit Ethernet Module, 6 Ports (GBIC)
WS-X4506-GB-T=	Catalyst 4500 Gigabit Ethernet Module, 6 Ports: 10/100/1000BASE PoE or SFP (Alternatively Wired)
WS-X4424-GB-RJ-45=	Catalyst 4500 24 port 10/100/1000 Auto-Sensing Module (RJ45)
WS-X4548-GB-RJ45=	Catalyst 4500 48 port 10/100/1000 Auto-Sensing Module (RJ45)
WS-X4124-RJ45=	Catalyst 4500 10/100 Module, 24-Ports(RJ45)
WS-X4224-RJ45V=	Catalyst 4500 PoE 802.3af 10/100 24-ports ( RJ45)
WS-X4524-GB-RJ45V=	Catalyst 4500 PoE 802.3af 10/100/1000, 24-Ports (RJ45)
WS-X4248-RJ21V=	Catalyst 4500 PoE 802.3af 10/100/1000, 48-Ports (RJ45)
WS-X4248-RJ45V=	Catalyst 4500 PoE 802.3af 10/100/1000, 48-Ports (RJ45)
WS-X4548-GB-RJ45V=	Catalyst 4500 PoE 802.3af 10/100/1000, 48-Ports (RJ45)
WS-X4418-GB=	Catalyst 4500 GE Module, Server Switching 18 Ports (GBIC)
WS-X4448-GB-SFP=	Catalyst 4500 48-Port GE 1000BASE-X (SFP sold separately)

### Catalyst 4500 Series Software

S4KL3-12.2(20)EWA=	Cisco IOS BASIC L3 SW Cat4500 SUP II-Plus/3/4(RIP,St.Routes,IPX,AT)
S4KL3E-12.2(20)EWA=	Cisco IOS ENHANCED L3 SW Cat4500 SUP3/4(OSPF,IGRP,EIGRP,IS-IS)

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## For More Information

See the Catalyst 4500 series Web site:

<http://www.cisco.com/en/US/products/hw/switches/ps4324/index.html>

## Cisco Catalyst 4900 Series — Fixed Configuration

The Cisco Catalyst 4948 is a wire-speed, low-latency, 1 RU fixed configuration switch for rack optimized server switching. Based on the proven Catalyst 4500 Series hardware and software architecture. The Catalyst 4948 series offers exceptional performance and reliability for low density, multilayer aggregation of high performance servers and workstations.



## When to Sell

### Sell This Product When a Customer Needs These Features

#### Catalyst 4948

- Advanced wirespeed, non-blocking Layer 2/3/4 10/100/1000 Gigabit Ethernet performance with intelligent Cisco IOS services, reliability & serviceability with optional internal AC and DC 1+1 hot swappable power supplies and a hot swappable fan tray with redundant fans

## Key Features

- Catalyst 4948:
  - Wire-speed performance with 96 Gbps of dedicated bandwidth for nonblocking Layer 2/3/4 Gigabit Ethernet concentration, redundant internal AC or DC power supplies with hot swappable fan tray, and SFP flexibility on fiber port interfaces covering a wide range of cabling distances

## Competitive Products

- Extreme Networks: Summit 400
- Foundry: FWS X448

## Specifications

Feature	Catalyst 4948
<b>Fixed Ports</b>	48 10/100/1000 & 4 SFP ports (Shared)
<b>Backplane Capacity</b>	96 Gbps
<b>Stackable</b>	No
<b>Power Supply Redundancy</b>	Yes. 1+1 AC or DC
<b>Fan Tray</b>	Hot Swappable with redundant fans
<b>EIGRP, OSPF, IS-IS, BGP</b>	Yes. Enhanced Software required
<b>Management Ports</b>	Dedicated 10/100 console port and 10/100 management port for disaster recovery
<b>Dimensions (H x W x D)</b>	1.75 in. x 17.3 in. x 16.1 in. (4.45cm. x 43.91 cm. x 40.99 cm.)

## Selected Part Numbers and Ordering Information<sup>1</sup>

### Catalyst 4900 Switch Series

WS-C4948-S	Cisco Catalyst 4948, std multilayer software image (RIP, static routes, IPX, AppleTalk), one AC power supply, fan tray
WS-C4948-E	Cisco Catalyst 4948, enhanced multilayer software image (OSPF, EIGRP, IS-IS, BGP), one AC power supply, fan tray
WS-C4948	Cisco Catalyst 4948, optional software image, optional power supplies, fan tray
S49L3E-12220EWA(=)	Enhanced multilayer software image: OSPF, IS-IS, EIGRP, BGP
PWR-C49-300AC(=)	Cisco Catalyst 4900 300-Watt AC power supply
PWR-C49-300DC(=)	Cisco Catalyst 4900 300-Watt DC power supply

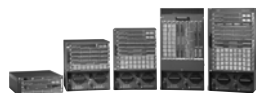
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## For More Information

See the Catalyst 4000 series Web site: <http://www.cisco.com/go/cat4000>

## Cisco Catalyst 6500 Series

The Catalyst 6500 Family delivers highly available secure converged network services for the Enterprise and Service Provider networks. Designed to address the increased requirements for gigabit scalability, high-availability, rich services, and multilayer switching in backbone, distribution, and wiring closet topologies as well as datacenter environments, the Catalyst 6500 Family delivers exceptional scalability and price/performance, supporting a wide range of interface densities, performance, and integration of powerful service modules. The Catalyst Family delivers a wide range of intelligent switching solutions, enabling corporate intranets, extranets, and the internet for multimedia, mission-critical data, and voice applications.



## When to Sell

### Sell This Product

**Catalyst 6513-E**

**Catalyst 6509-E**

**Catalyst 6506-E**

**Catalyst 6503-E**

### When a Customer Needs These Features

- A high capacity chassis for Ethernet connectivity, with slots to spare for services modules providing network security and management
- A traditional chassis for the wiring closet, distribution and core, data center, and WAN edge
- A traditional chassis for the wiring closet, distribution and core, data center, and WAN edge
- A low-density, wiring-closet chassis sharing interface modules and supervisor engines with larger chassis for common sparing

## Key Features

- Supervisor Engine 720—Position for enterprise core, distribution, and data centers: Up to 720 Gbps Switch Fabric Connection; 400 Mpps; Supports new accelerated Cisco Express Forwarding (CEF720) and distributed Cisco Express Forwarding (dCEF720) interface modules; IPv6 and MPLS in hardware
- Supervisor Engine 2 MSFC2—Position for enterprise distribution, data centers, and WAN edge: Up to 256 Gbps Switch Fabric Connection with SFM; 210 Mpps; Supports distributed Cisco Express Forwarding (dCEF256) interface modules; Supports Layer 3 routing protocols
- Supervisor Engine 2 PFC2—Position for premium wiring closet and data center access; Up to 256 Gbps Switch Fabric Connection with SFM; 30 Mpps Centralized Forwarding using Cisco Express Forwarding (CEF) in hardware
- Supervisor Engine 32—Position for , wiring-closet: 32-Gbps shared bus connection to modules; 15 Mpps; Centralized Layer 2, Layer 3 forwarding and comes in two models, either 8-port 1GE model or 2-port 10GbE uplinks

## Competitive Products

- Extreme: Black Diamond
- Foundry: Big Iron
- Lucent: Cajun Switch 550
- Nortel: Passport 8600

## Specifications

Feature	6503-E	6506-E	6509-E	6513
<b>Modular Slots</b>	3	6	9	13
<b>Maximum Port Density</b>	192 10/100 104 10/100/1000 96 100FX 98 SFP Gigabit 34 GBIC Gigabit 8 10GE	480 10/100 248 10/100/1000 240 100FX 242 242 SFP Gigabit 82 GBIC Gigabit 20 10 GE	768 10/100 392 10/100/1000 384 100FX 386 SFP Gigabit 130 GBIC Gigabit 32 10GE	1152 10/100 584 10/100/1000 576 100FX 410 SFP Gigabit 194 GBIC Gigabit 20 10GE
<b>WAN Interfaces</b>	DS0 to OC-48	DS0 to OC-48	DS0 to OC-48	DS0 to OC-48
<b>Available Bandwidth</b>	Scalable to 240 Gbps	Scalable to 480 Gbps	Scalable to 720 Gbps	Scalable to 720 Gbps
<b>Throughput</b>	Scalable to 99 Mpps	Scalable to 243 Mpps	Scalable to 387 Mpps	Scalable to 425 Mpps
<b>Redundant Supervisor</b>	Yes	Yes	Yes	Yes
<b>Hot-Swappable Power Supplies</b>	Yes	Yes	Yes	Yes
<b>VLAN Maximum</b>	4000	4000	4000	4000
<b>FEC/GEC</b>	Yes	Yes	Yes	Yes
<b>Management Capabilities</b>	CiscoWorks 2000, RMON, Enhanced Switched Port Analyzer (ESPA), SNMP, Telnet, BOOTP, and Trivial File Transfer Protocol (TFTP)	Same as Catalyst 6503	Same as Catalyst 6503	Same as Catalyst 6503
<b>Dimensions H x W x D (in.)</b>	4 RU, 7 x 17.5 x 21.7	12 RU, 19.2 x 17.5 x 18.2	15 RU, 24.5 x 17.5 x 18.2	20 RU, 33.3 x 17.3 x 18.1

## Selected Part Numbers and Ordering Information<sup>1</sup>

### Catalyst 6500 - Bundles

WS-C6503-E-PFC2	Cat6503 SMARTnet Bundle chassis,Sup2-PFC2,Fan Tray,No wrSup
WS-C6503-E-FWM-K9	Cisco Catalyst 6503 Firewall Security System
WS-C6503-E-IPSEC-K9	Cisco Catalyst 6503 IPsec VPN System
WS-C6506-E-PFC2	Cat6506 SMARTnet Bundle chassis,Sup2-PFC2,Fan Tray,No wrSup
WS-C6506-E-FWM-K9	Cisco Catalyst 6506 Firewall Security System
WS-C6506-E-IPSEC-K9	Cisco Catalyst 6506 IPsec VPN System
WS-C6509-E-PFC2	Cat6509 SMARTnet Bundle chassis,Sup2-PFC2,Fan Tray,No wrSup
WS-C6509-E-FW-IDS-K9	Catalyst Firewall and Intrusion Prevention System
WS-C6509-E-FW-VPN-K9	Catalyst Firewall and VPN Security System

### Catalyst 6500 - Chassis

WS-C6503-E	Enhanced Cat 6503 Chassis, 3slot, 4RU, No Pow Supply, No Fan Tray
WS-C6506-E	Enhanced Cat 6506 Chassis, 6slot, 12RU, No Pow Supply, No Fan Tray
WS-C6509-E	Enhanced Cat 6509 Chassis, 9slot, 15RU, No Pow Supply, No Fan Tray
WS-C6509-NEB-A	Cat 6509 NEBS Chassis for all Supervisors,No PS,No Fan
WS-C6513	Cat 6513 Chassis, 13slot, 19RU, No Pow Supply, No Fan Tray

**Catalyst 6500 - Supervisor Engines & Switch Fabric Modules**

WS-SUP720-3BXL=	Catalyst 6500/Cisco 7600 Supervisor 720 Fabric MSFC3 FC3BXL
WS-SUP720-3B=	Catalyst 6500/Cisco 7600 Supervisor 720 Fabric MSFC3 PFC3B
WS-SUP720=	Catalyst 6500/Cisco 7600 Supervisor 720 Fabric MSFC3 PFC3A
WS-X6K-S2U-MSFC2=	Catalyst 6500 Supervisor 2U, 256MB Supervisor, 512MB PFC2
WS-X6K-S2-MSFC2=	Catalyst 6500 Supervisor Engine-2, 2GE, plus MSFC-2 / PFC-2
WS-X6K-S2-PFC2=	Catalyst 6500 Supervisor Engine-2, 2GE, plus PFC-2
WS-SUP32-GE-3B=	C6500 Supervisor 32 with 8 GigE uplinks and PFC3B
WS-SUP32-10GE-3B=	Cat 6500 Supervisor 32 with 2 ports 10GbE and PFC3B

**Catalyst 6500 10GE**

WS-X6704-10GE=	Cat6500 4-port 10 Gigabit Ethernet Module (req. XENPAKs)
Catalyst 6500 - Gigabit Ethernet	
WS-X6516A-GBIC=	Catalyst 6500 16-port GigE Mod, fabric-enabled (Req. GBICs)
WS-X6724-SFP=	Catalyst 6500 24-port GigE Mod: fabric-enabled (Req. SFPs)
WS-X6748-SFP=	Catalyst 6500 48-port CEF720 GigE Module (Req. SFPs)
WS-X6816-GBIC=	Cat6500 16-port GigE mod, 2 fab I/F, (Req GBICs, DFC/DFC3)

**Catalyst 6500 - 10/100/100 Ethernet**

WS-X6148-GE-TX=	Catalyst 6500 48-port 10/100/1000 GE Mod., RJ-45
WS-X6148A-GE-TX=	Catalyst 6500 48-port 10/100/1000 GE Mod., RJ-45
WS-X6148-GE-45AF=	Cat6500 PoE 802.3af 10/100/1000, 48 port (RJ45) line card
WS-X6148A-GE-45AF=	Cat6500 PoE 802.3af 10/100/1000, 48 port (RJ45) line card
WS-X6548-GE-TX=	Catalyst 6500 48-port fabric-enabled 10/100/1000 Module
WS-X6548-GE-45AF=	Cat 6500 PoE 802.3af 10/100/1000 48-port(RJ45)CEF256 card
WS-X6748-GE-TX=	Cat6500 48-port 10/100/1000 GE Mod: fabric enabled, RJ-45

**Catalyst 6500 - 10/100 Ethernet**

WS-X6148-RJ-21=	Catalyst 6500 48-Port 10/100 Upgradable to Voice, RJ-21
WS-X6148-21AF=	Cat6500 PoE 802.3af 10/100, 48 port (RJ21) line card
WS-X6148-RJ-45=	Catalyst 6500 48-Port 10/100, Upgradable to Voice, RJ-45
WS-X6148A-RJ-45=	Catalyst 6500 48-Port 10/100 w/TDR, Upgradable - PoE 802.3af
WS-X6148-45AF=	Catalyst 6500 PoE 802.3af 10/100, 48 port(RJ45) line card
WS-X6148A-45AF=	Catalyst 6500 PoE 802.3af 10/100, 48 port(RJ45) line card
WS-X6148X2-RJ-45=	Cat6500 96-Port 10/100 (RJ45), Upgradable to PoE 802.3af
WS-X6148X2-45AF=	Cat6500 PoE 802.3af 10/100, 96-Port ( RJ-45) line card
WS-X6548-RJ-21=	Catalyst 6500 48-port 10/100, RJ-21, fabric-enabled
WS-X6548-RJ-45=	Catalyst 6500 48-port 10/100, RJ-45, fabric-enabled

**Catalyst 6500 100 FX**

WS-X6148FE-SFP=	Catalyst 6500 48 port 100Base-X module (require SFP)
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**Catalyst 6500 - Catalyst 6500 - Services Modules**

WS-SVC-CMM=	COMMUNICATION MEDIA MODULE
WS-SVC-CMM-24FXS=	24-Port FXS Interface Port Adapter
WS-SVC-CMM-6E1=	6-PORT E1 INTERFACE PORT ADAPTER
WS-SVC-CMM-6T1=	6-PORT T1 INTERFACE PORT ADAPTER
WS-SVC-CMM-ACT=	Adhoc Conferencing and Transcoding PA
WS-SVC-CSG-1=	Content Services Gateway
WS-SVC-FWM-1-K9=	Firewall blade for Catalyst 6500
WS-SVC-IDS2BUNK9=	IDS/IPS 2 600M mod spare
WS-SVC-IPSEC-1=	IPSec VPN Security Module for 6500 and 7600 series
WS-SVC-MWAM-1=	Multi-Processor WAN Application Module
WS-SVC-NAM-1=	Catalyst 6500 Network Analysis Module-1
WS-SVC-NAM-2=	Catalyst 6500 Network Analysis Module
WS-SVC-PSD-1=	Persistent Storage Device
WS-SVC-SSL-1-K9=	SSL Module for Catalyst 6500
WS-SVC-WLAN-1-K9=	Wireless LAN Services Module, CEF256
WS-X6066-SLB-APC=	Catalyst 6500/7600 Content Switching Module
WS-X6066-SLB-S-K9=	Content Switching Module with SSL daughter card

1. This is only a small subset of all parts available via URL listed under "For More Information." Some parts have restricted access or are not available through distribution channels.

**For More Information**

See the Catalyst 6500 Family Web site: <http://www.cisco.com/go/6000>

## Cisco Catalyst 8500 Multiservice Switch Routers

The Catalyst 8500 family multiservice switch routers integrate multiservice ATM switching with wire-speed multiprotocol routing for Gigabit Ethernet and Fast Ethernet into a single platform that also supports advanced Cisco IOS services for QoS and security. This family delivers enterprise MAN/WAN and Service Provider multiservice edge solutions with scalable performance, lower cost of ownership, and offer multiple interface options in a modular chassis. The Catalyst 8500 series consists of the modular Catalyst 8510 (10-Gbps, 5-slot) switch and the modular Catalyst 8540 (40-Gbps, 13-slot) switch. Both switches implement Cisco IOS Software to provide a variety of network services including reliability, security, management, and QoS with CiscoAssure policy networking.



### When to Sell

#### Sell This Product

**Catalyst 8540 and  
Catalyst 8510**

#### When a Customer Needs These Features

- Integrated 10/100 FE, GE, and ATM
- Flexible ATM interfaces (T1/E1, IMA, DS3/E3, OC-3, OC-12, and OC-48)
- Frame relay and circuit emulation services
- Wire-speed performance
- Multiservice MAN/WAN applications
- Multiservice Edge solutions
- Voice, data, and video solutions
- MPLS VPN

### Key Features

- Ideal for integrated multiservice ATM switching with wire-speed multiprotocol routing for gigabit Ethernet (L3eATM or Layer 3 enabled ATM)
- Ideal for aggregating multiprotocol traffic from multiple wiring closets or from workgroup switches such as the Catalyst 5000 or distribution/server aggregation switches such as the Catalyst 6000 Family
- Provides nonblocking routing for IP, IPX, and IP multicast while also offering wire-speed Layer 2 switching for nonroutable protocols such as NetBIOS and DECnet local-area transport (LAT)
- Aggregate throughput of up to 24 million packets per second (pps) for non-blocking, wirespeed Layer 3 switching

### Competitive Products

- Foundry: Big Iron
- Lucent: PSAX 1250 and 2300
- Marconi: ASX 1000, 1200, and 4000
- Alcatel: Omniswitch

### Specifications

Feature	Catalyst 8510	Catalyst 8540
<b>Modular Slots</b>	5	13
<b>Available Modules</b>	See Part Numbers and Ordering information for a partial parts list	
<b>Backplane</b>	10 Gbps	40 Gbps
<b>Throughput Performance</b>	6 Mpps	24 Mpps
<b>MAN / WAN</b>	Gig Ethernet / ATM	Gig Ethernet / ATM
<b>Dimensions (HxWxD)</b>	10.5 x 17.2 x 18.14 in.	25.25 x 17.3 x 18.25 in.



## Selected Part Numbers and Ordering Information<sup>1</sup>

### Catalyst 8540—Common Equipment

C8540MSR-SKIT-AC	C8540 MSR Starter Kit w/ Stratium 4 Clock Module—AC Power (also available in DC Power)
C8545MSR-MRP4CLK=	C8540 MSR Multiservice Route Processor (spare)
C8545MSR-MRP3CLK=	C8540 MSR Route Processor Stratium 3 (spare)
C8546MSR-MSP-FCL=	C8540 MSR Switch Processor with ATM FC (spare)
C8540-CHAS13=	Catalyst 8540 - Chassis (spare)
C8540-PWR-AC=	C8540 Power Supply—AC (also available in DC Power)

### Catalyst 8510—Common Equipment

C8510MSR-SKIT-AC	Catalyst 8510 MSR Starter Kit with AC Power (also available as -DC for DC Power)
C8515-MSRP=	C8510 Multiservice Switch Route Processor (spare)
C8510-SRP=	C8510 Layer 3 Switch Route Processor (spare)
C8510-CHAS5=	Catalyst 8510 - Chassis (spare)
C8510-PWR-AC=	C8510 power supply, AC (spare) (also available in DC power)

### Catalyst 8500 Family—ATM Router Module Equipment

C8540-ARM-64K=	C8540 ATM Router Module 64K (also available for 8510)
C8540-ARM2=	C8540 Enhanced ATM Router Module (spare)

### Catalyst 8500—Layer 3 Modules and ATM Interface Modules and Uplinks

C85EGE-2X-16K=	C8540 2-port Enhanced GE 16K (also available in 64K and 256K)
C85GE-8X-64K=	C8540 8-port GE 64K
C85FE-16TACL-64K=	C8540 16-port 10/100 RJ-45 w/ACL 64K
C8540-ACL=	C8540 ACL Daughter Card (also available for C8510/LS1010)
C85GE-1X-16K=	C8510/LS1010 1-port Gigabit Ethernet 16K (also available in 64K)
C85FE-8T-64K=	C8510/LS1010 8-port 10/100 RJ-45 64K
C85MS-4F-OC12SS=	C8540 4-port OC-12c/STM-4 SMF
C85MS-4F-OC12MM=	C8540 4-port OC-12c/STM-4 MMF
C85MS-16F-OC3MM=	C8540 16-port OC-3c/STM-1 MMF (spare)
C85MS-16F-OC3SM=	C8540 16-port OC-3c/STM-1 SMF-LR (spare)

### Catalyst 8500—Port Adapter Modules

C85MS-SCAM-2P=	C8540 SuperCAM for Port Adapter Modules (spare)
C8510TSCAM-2P=	CS8510/LS1010 Traffic Shaping Carrier Access Modules (spare)
WATM-CAM-2P=	C8510 / LS1010 Carrier Modules (spare)
WAI-T1C-4RJ48=	4 Port T1 (circuit emulation) RJ-48 PAM (also available in E1 and in E1 BNC)
C85MS-4E1-FRRJ48=	C8500 4-port E1 Frame-Relay/FUNI PAM (spare)
WAI-OC3-4MM=	4 Port OC-3c/STM-1 MMF PAM (also available in SMF-IR & SMF-LR)
WAI-OC3-1S3M=	OC-3c/STM-1 Mix PAM, 1-port SMF-IR + 3-port MMF (spare)
WAI-OC12-1MM=	1 Port OC-12c/STM-4c MMF PAM (also available in SMF-IR and SMF-LR)
WAI-T3-4BNC=	4 Port DS-3 PAM (spare and in E3 BNC)
C85MS-8T1-IMA=	C8500MSR/LS1010 8-port TI IMA PAM (also available in E1 120 ohm)
WAI-T1-4RJ48=	4 Port T1 (ATM) RJ-48 PAM (spare also available in E1 and E1 BNC E1)

### Catalyst 8500 Software Feature License Options

FR-8510-TAGSW=	C8510 Tag Switching upgrade license (also available with HPNNI and HPNNI + Tag Switching)
FR-8540MSR-HPNNI=	Cat 8540MSR—Hierarchical PNNI License (also available with Tag Switching)

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## For More Information

See the Catalyst 8500 series Web site: <http://www.cisco.com/go/8500>

