

## Cisco Catalyst 4900M Switch

High-Performance Small Form-Factor Cisco Catalyst Switch with Flexibility and Investment Protection for Top-of-Rack Switching or Midmarket Collapsed Core and Aggregation Layer Deployment

### Product Overview

The Cisco® Catalyst® 4900M Switch (Figure 1) is designed for data center network top-of-rack switching and midmarket collapsed core and aggregation layer deployment. Optimized for ultimate deployment flexibility for the data center, the Cisco Catalyst 4900M can be deployed for 10/100/1000 or 1/10GBASE-T server access with 1:1 uplink-to-downlink oversubscription and environments with a mix of 10/100/1000 and 10 Gigabit Ethernet servers or all 10 Gigabit Ethernet servers.

The Cisco Catalyst 4900M is a 320-Gbps, 250-million-packets-per-second (mpps), two-rack-unit (2RU) fixed-configuration switch with eight fixed wire-speed X2 ports on the base unit and two optional half-card slots for deployment flexibility and investment protection. Low latency, scalable buffer memory, and high availability with 1+1 hot-swappable AC or DC power supplies and a field-replaceable fan tray optimize the Cisco Catalyst 4900M for data centers of any size.

For the midmarket collapsed core and aggregation layer and in the branch office, the Cisco Catalyst 4900M provides an ideal solution for space-constrained deployments that require high-performance wire-speed services and high availability. With the unique semifixed architecture and support of the Cisco TwinGig Converter Module, the Cisco Catalyst 4900M can be used in a collapsed core and aggregation layer LAN deployment, providing the flexibility to deploy Gigabit Ethernet now and cost-effectively migrate to 10 Gigabit Ethernet as requirements change.

The Cisco Catalyst 4900M configuration provides wire-speed connection, buffers to handle bursty traffic, and a comprehensive set of Layer 3 features required at the collapsed core and aggregation layer of the network. The Cisco Catalyst 4900M also supports a suite of ease-of-management features to simplify operations.

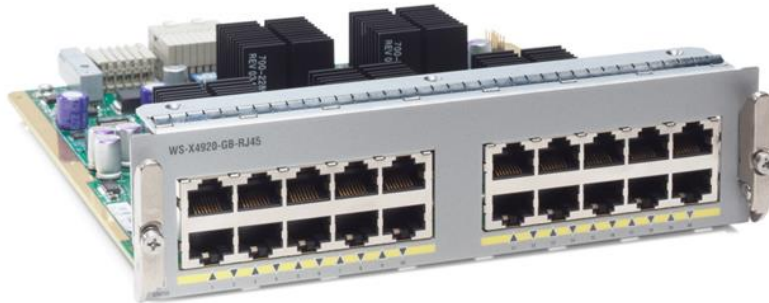
**Figure 1.** Cisco Catalyst 4900M Switch



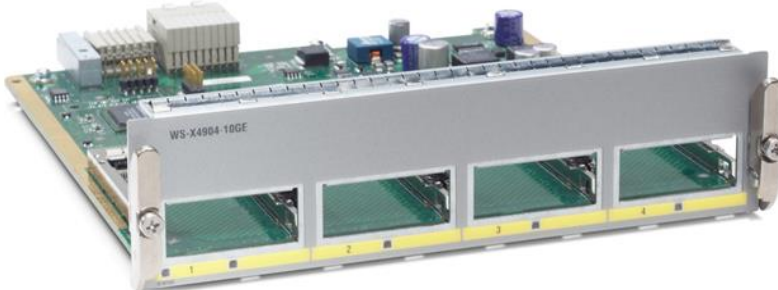
## Features and Benefits

The Cisco Catalyst 4900M half cards provide a wide variety of combinations of Gigabit Ethernet and 10 Gigabit Ethernet media types. The base unit can accommodate up to two of the half cards shown in Figures 2, 3, 4, and 5, in any combination.

**Figure 2.** 20-Port Wire-Speed 10/100/1000 (RJ-45) Half Card



**Figure 3.** 4-Port Wire-Speed 10 Gigabit Ethernet (X2) Half Card



**Figure 4.** 8-Port (2:1) 10 Gigabit Ethernet (X2) Half Card (Compatible with Cisco TwinGig Converter Module)



**Figure 5.** 8-Port (2:1) 10GBASE-T RJ-45 Half Card<sup>1</sup> (Capable of Operating at 1G/10G for Up to 100m on Cat6a/Cat7 Cable)



In addition to deployment flexibility, the half slots provide investment protection for further additions of Gigabit Ethernet and 10 Gigabit Ethernet media.

Table 1 summarizes the features and benefits of the Cisco Catalyst 4900M.

**Table 1.** Features and Benefits

Feature	Benefit
<b>Outstanding Scalability</b>	
17.5 MB shared buffers	Large buffers for microburst and high traffic control
Up to 320 Gbps and 250 mpps wire-speed performance with low latency	Delay-sensitive traffic forwarded without interruption
Wire-speed uplinks	Elimination of oversubscription bottlenecks between downlinks and uplinks across the switch with any combination of half cards
<b>Configuration Flexibility</b>	
Choice of Gigabit Ethernet and 10 Gigabit Ethernet interfaces	Granular configuration options for all—Gigabit Ethernet to 10 Gigabit Ethernet transition
Choice of copper or fiber 1G/10G Ethernet interfaces	Mix and match 1G/10G RJ-45 and X2 line cards
Online insertion and removal of cards	In-service line card changes
Cisco TwinGig Converter Module support*	Gigabit Ethernet and 10 Gigabit Ethernet interface support on the same card
Dual AC or DC power	High availability for nonstop operation
<b>Investment Protection</b>	
Modular half slots	Migration to new media types through additional half cards
Field-replaceable power supplies and hot-swappable removable fan	Extended longevity of hardware
Use of existing software	Consistent operational model for all Cisco Catalyst 4900 Series Switches

\* Supported only on 8-port (2:1) 10 Gigabit Ethernet (X2) half card.

### One System, Many Configurations

The Cisco Catalyst 4900M can be configured to meet the needs of many types of top-of-rack deployments. Table 2 summarizes the configuration options.

<sup>1</sup> Available 1HCY10.

**Table 2.** Cisco Catalyst 4900M Configuration Options

Configuration	10 Gigabit Ethernet (X2) Ports	1/10 Gigabit Ethernet (10GBASE-T) Ports	10/100/1000 Ports	Gigabit Ethernet (Small Form-Factor Pluggable [SFP]) Ports Using TwinGig Converter Module
10/100/1000 access with 10 Gigabit Ethernet uplinks	8	0	40	0
10/100/1000 and 10 Gigabit Ethernet access with 10 Gigabit Ethernet uplinks	12 or 16	0	20	0
Gigabit Ethernet (SFP) access with 10 Gigabit Ethernet uplinks	8	0	0	32
Gigabit Ethernet (SFP) and 10 Gigabit Ethernet access with 10 Gigabit Ethernet uplinks	12 or 16	0	0	16
10 Gigabit Ethernet access (X2) with 10 Gigabit Ethernet uplinks	16 or 24	0	0	0
Gigabit Ethernet (SFP) and 10/100/1000 access with 10 Gigabit Ethernet uplinks	8	0	20	16
10 Gigabit Ethernet access (10GBASE-T) with 10 Gigabit Ethernet Uplinks	8	16	0	0
10/100/1000 and 10 Gigabit (10GBASE-T) Ethernet access with 10 Gigabit Ethernet uplinks	8	8	20	0
10 Gigabit (10GBASE-T) and 10 Gigabit (X2) Ethernet access with 10 Gigabit Ethernet uplinks	12 or 16	8	0	0
10 Gigabit (10GBASE-T) and Gigabit Ethernet (SFP) access with 10 Gigabit Ethernet uplinks	8	8	0	16

### 10 Gigabit Ethernet and Gigabit Ethernet on the Same Half Card

The Cisco TwinGig Converter Module (Figure 6) converts a single 10 Gigabit Ethernet X2 interface into two Gigabit Ethernet port slots that can be populated with SFP optics, enabling customers to use Gigabit Ethernet SFPs on the same card in combination with 10 Gigabit Ethernet X2 optics. The Cisco OneX Converter Module is supported on all 10 Gigabit Ethernet modules of the Cisco Catalyst 4900M. The Cisco OneX converts an X2 interface into one SFP+ interface and uses the full range of Cisco SFP+ transceivers (Figure 7).

**Figure 6.** Cisco TwinGig Converter Module Converts a 10 Gigabit Ethernet X2 Interface into Two Gigabit Ethernet SFPs

**Figure 7.** Cisco OneX Converter Module Converts an X2 Interface into One SFP+ Interface

### Operational Consistency and Control

The Cisco Catalyst 4900M includes a console port to manage all system features. Remote in-band management is available with Simple Network Management Protocol (SNMP), Telnet client, BOOTP, and Trivial File Transfer Protocol (TFTP). Support for local or remote out-of-band management is delivered through a terminal or modem attached to the console interface.

The Cisco Catalyst 4900M supports file allocation table (FAT) file systems. System images can be updated directly through Microsoft Windows–based machines with compact flash memory readers.

Using CiscoWorks solutions, Cisco Catalyst switches can be configured and managed to deliver end-to-end device, VLAN, traffic, and policy management. The CiscoWorks LAN Management Solution (LMS) bundle offers tools such as CiscoWorks Resource Manager Essentials and CiscoWorks CiscoView. These web-based management tools offer several services, including automated inventory collection, software deployment, easy tracking of network changes, views into device availability, and quick isolation of error conditions.

### Software Configuration Options

Table 3 describes the software configuration options for the Cisco Catalyst 4900M Switch, and Table 4 describes the hardware options.

**Table 3.** Software Configuration Options for the Cisco Catalyst 4900M Switch

Software Image	Description
<b>IP Base image</b>	Standard Layer 3 image, including Routing Information Protocol Version 1 (RIPv1), RIPv2, static routes, and Enhanced Interior Gateway Routing Protocol (EIGRP) stub
<b>Enterprise Services image</b>	Enhanced Layer 3 image, including Open Shortest Path First (OSPF), EIGRP, and Border Gateway Protocol (BGP); also includes all IP Base image features

**Table 4.** Cisco Catalyst 4900 Series Hardware Comparison

Feature and Description	Cisco Catalyst 4948	Cisco Catalyst 4948—10GE	Cisco Catalyst 4900M
<b>Switching capacity</b>	96 Gbps	136 Gbps	320 Gbps
<b>Throughput</b>	72 mpps	102 mpps	250 mpps for IPv4 125 mpps for IPv6
<b>IPv6 support</b>	In software	In software	In hardware
<b>Height</b>	1RU	1RU	2RU
<b>Modular half-card slots</b>	0	0	2
<b>Maximum 10/100/1000 Ports</b>	48	48	40

<b>Maximum 10 Gigabit Ethernet (RJ-45) ports</b>	0	0	16
<b>Maximum 10 Gigabit Ethernet (fiber) ports</b>	0	2	24
<b>Maximum Gigabit Ethernet (fiber) ports</b>	4	0	32 (Cisco TwinGig Converter Module)
<b>Cisco TwinGig Converter Module support</b>	No	No	Yes (half cards only)
<b>Uplink optic types</b>	4 SFP optics	Two X2 (10 Gigabit Ethernet) optics	Eight X2 (10 Gigabit Ethernet) optics, 8 SFP+ (using OneX)
<b>Multilayer switching</b>	IP Base and Enterprise Services options	IP Base and Enterprise Services options	IP Base and Enterprise Services options
<b>Shared buffer</b>	16 MB	16 MB	17.5 MB
<b>CPU</b>	266 MHz	666 MHz	1.3 GHz
<b>Synchronous Dynamic RAM (SDRAM)</b>	256 MB	256 MB	512 MB
<b>Active VLANs</b>	4096	4096	4096
<b>Multicast entries</b>	28,000 (Layer 3) 16,000 (Layer 2)	28,000 (Layer 3) 16,000 (Layer 2)	70,000 for IPv4 35,000 for IPv6
<b>Per VLAN Spanning Tree (PVST) Protocol and VLAN IDs</b>	4096	4096	4096
<b>Spanning Tree Protocol instances</b>	4094	4094	4094
<b>Switched Virtual Interfaces (SVIs)</b>	2000	2000	4096
<b>Security and quality-of-service (QoS) hardware entries</b>	32,000	32,000	128,000
<b>MAC addresses</b>	32,000	55,000	55,000
<b>Switched Port Analyzer (SPAN)</b>	2 ingress and 4 egress	2 ingress and 4 egress	8 ingress and 8 egress
<b>USB port</b>	No	No	Yes
<b>Compact flash memory support</b>	No	No	Yes
<b>System reset button</b>	No	No	Yes
<b>Minimum software requirement</b>	Cisco IOS® Software Release 12.2(20)EWA or later	Cisco IOS Software Release 12.2(25)EWA or later	Cisco IOS Software Release 12.2(46)SG or later

## Features at a Glance

### Layer 2 Features

- Layer 2 switch ports and VLAN trunks
- IEEE 802.1Q VLAN encapsulation
- Dynamic Trunking Protocol (DTP)
- VLAN Trunking Protocol (VTP) and VTP domains
- VTP pruning
- VTPv3
- Port security on trunk port
- Q-in-Q passthrough
- Support for 4096 VLANs per switch
- PVST+ and Per-VLAN Rapid Spanning-Tree Protocol (PVRST)
- Spanning Tree PortFast and PortFast guard
- Spanning Tree UplinkFast and BackboneFast
- IEEE 802.1s
- IEEE 802.1w

- IEEE 802.3ad
- Spanning Tree root guard
- Cisco Discovery Protocol
- Internet Group Management Protocol (IGMP) versions 1, 2, and 3 snooping
- IPv6 Multicast Listener Discovery (MLD) snooping
- Cisco EtherChannel technology, Cisco Fast EtherChannel technology, and Cisco Gigabit EtherChannel technology across half cards and base unit
- Port Aggregation Protocol (PAgP)
- Link Aggregation Control Protocol (LACP)
- Unidirectional link detection (UDLD) and aggressive UDLD
- Jumbo frames (up to 9216 bytes)
- Baby Giants (up to 1600 bytes)
- Storm control (formally known as broadcast and multicast suppression)
- Forced 10/100 autonegotiation
- Bridge protocol data unit (BPDU) guard
- FlexLink and FlexLink with VLAN Load Balancing
- IEEE 802.1ab Link Layer Discovery Protocol (LLDP) and 802.1ab LLDP Media Endpoint Devices (LLDP-MED)
- Resilient Ethernet Protocol (REP)
- IEEE 802.1Q tunneling (Q-in-Q) in hardware
- Layer 2 protocol tunneling

### Layer 3 Features

- Jumbo frames on all ports (up to 9216 bytes)
- Hardware-based IP Cisco Express Forwarding routing at 250 mpps
- IP routing protocols: EIGRP, OSPF, BGP4, RIP, and RIPv2
- OSPF fast convergence
- OSPF and EIGRP fast convergence protection
- EIGRP stub
- Static routing
- Inter-VLAN routing
- Virtual Route Forwarding lite (VRF-lite)
- Multicast VRF-lite
- VRF-aware IP services
- EIGRP to Multi-VRF CE (VRF-lite)
- Equal Cost Multi Path Routing (ECMP), up to 8 paths
- IPv6: RIP next generation (RIPng) for IPv6
- IPv6: OSPFv3
- IPv6: EIGRP
- Software-based generic routing encapsulation (GRE) tunneling
- IGMP v1, v2, and v3



- IGMP filtering on access and trunk ports
- IP multicast routing protocols: Protocol Independent Multicast (PIM) (sparse mode [SM], dense mode [DM], SDM)
- Protocol Independent Multicast Version 6 (PIMv6) (SM)
- Pragmatic General Multicast
- Bidirectional (Bi-dir) PIM
- Internet Control Message Protocol (ICMP)
- ICMP Router Discovery Protocol
- Dynamic Host Configuration Protocol (DHCP) server
- Per-port multicast suppression
- Unicast Reverse Path Forwarding (RPF)
- Policy-based routing (PBR)
- PIM source-specific multicast (SSM) mapping

#### **High Availability Features**

- 1+1 hot-swappable AC or DC power supplies
- Hot-swappable field-replaceable fan tray with redundant fans
- Hot Standby Router Protocol (HSRP)
- HSRPv2
- Virtual Router Redundancy Protocol (VRRP)
- Cisco IOS Embedded Event Manager (EEM)
- Cisco Generic Online Diagnostics (GOLD)
- Enhanced Object Tracking (EOT)

#### **IPv6 Support**

- RIP next generation (RIPng) for IPv6
- OSPFv3
- EIGRP
- PIMv6 (SM)
- IPv6 unicast and multicast forwarding in hardware
- IPv6 addressing architecture
- Cisco Discovery Protocol IPv6 address family
- Cisco Express Forwarding and Distributed Cisco Express Forwarding in hardware
- Extended ACL
- ICMP rate limiting
- ICMPv6
- ICMPv6 redirect
- IP MIB
- IPv6 over IEEE 802.1Q
- IPv6 over IPv4 GRE tunnel (tunnel support in software)
- Intrasite Automatic Tunnel Addressing Protocol (ISATAP)



- Loopback
- MLD snooping
- MLDv1 and v2
- Maximum transmission unit (MTU) path discovery for IPv6
- Ping
- IPv6: Secure Shell (SSH) over an IPv6 transport
- Stateless autoconfiguration
- Static routes within IPv6
- Authentication, authorization, and accounting (AAA)
- Telnet
- Trivial FTP (TFTP)
- Traceroute
- Duplicate address detection
- Standard ACL
- IPv6 tunnels in software
- Hop-by-hop option header; in software
- DHCPv6 relay agent
- HSRPv2 IPv6

#### **Sophisticated QoS and Traffic Management**

- Modular QoS command-line interface (MQC)
- Per-port per VLAN QoS
- Dynamic Tx queue sizing
- Strict priority queuing
- IP differentiated services code point (DSCP)
- IEEE 802.1p class of service
- Flexible classification marking
- Classification and marking based on full Layer 3 and 4 headers
- Input and output policing based on Layer 3 and 4 headers
- Support for 16,000 policers with flexible assignment for input and output
- 2-rate 3-color policing
- Output queue management shaping and sharing
- Dynamic buffer limiting: Congestion-avoidance feature

#### **Performance and Scalability**

- 320-Gbps switching fabric
- Layer 2 hardware forwarding at 250 mpps
- Layer 3 hardware-based IP Cisco Express Forwarding routing at 250 mpps
- Layer 4 TCP and User Datagram Protocol (UDP) hardware-based filtering at 250 mpps
- Software-based learning at a sustained rate of 10,000 hosts per second
- 55,000 unicast MAC addresses

- 16,000 multicast MAC addresses
- 200,000 entries in routing table (shared between unicast and multicast)
- 4000 virtual ports (VLAN port instances)
- Bandwidth aggregation up to 16 Gbps through Cisco Gigabit EtherChannel technology.
- Bandwidth aggregation up to 160 Gbps for 10 Gigabit Ethernet through 10 Gigabit EtherChannel technology
- Hardware-based multicast management
- Hardware-based ACLs

### **Management**

- Console port to manage all system features
- Software configuration management, including local and remote storage
- Optional compact flash memory card to store software images for backup and easy software upgrades (future)
- USB drive support (future)
- FAT file system support
- Manageable through CiscoWorks Windows network-management software on a per-port and per-switch basis, providing a common management interface for Cisco routers, switches, and hubs
- SNMP v1, v2, and v3 instrumentation, delivering comprehensive in-band management
- CLI-based management console to provide detailed out-of-band management
- Remote monitoring (RMON) software agent to support four RMON groups (history, statistics, alarms, and events) for enhanced traffic management, monitoring, and analysis
- Analysis support, including ingress port, egress port, and VLAN SPAN
- Layer 2 traceroute
- Cisco SmartPort macros
- SPAN ACL filtering
- DHCP client autoconfiguration
- Enhanced SNMP MIB support
- Network Timing Protocol (NTP)
- E-OAM 802.3ah and Connectivity Fault Management (CFM; 802.1ag)
- Ethernet management port
- Remote SPAN (RSPAN)
- Smart Call Home
- Network Mobility Service Protocol (NMSP)
- Management port features

### **Advanced Security**

- TACACS+ and RADIUS, which enable centralized control of the switch and restrict unauthorized users from altering the configuration
- Standard and extended ACLs on all ports
- IEEE 802.1X user authentication (with VLAN assignment, voice VLAN, and port security)
- Router ACLs (RACLs) on all ports (no performance penalty)
- VLAN ACLs (VACLs)

- Port ACLs (PACLs)
- Private VLANs (PVLANS) on access ports
- DHCP snooping and Option 82 insertion
- Port security
- Sticky port security
- SSHv1 and SSHv2
- Unicast port flood blocking
- Dynamic Address Resolution Protocol (ARP) inspection
- IP source guard
- VLAN Management Policy Server (VMPS) client
- Network Admission Control (NAC) Layer 2 IEEE 802.1X
- NAC LAN port IP
- Secure Copy Protocol (SCP)
- Unicast RPF
- IEEE 802.1X Guest VLAN
- IEEE 802.1X Radius Accounting
- IEEE 802.1X MAC Authentication Bypass
- Control plane policing
- Access Node Control Protocol (ANCP) client
- Cisco Trusted Security Multihop Security Group Tag Exchange Protocol

## Technical Specifications

### Management

- CiscoWorks LMS; includes CiscoWorks Resource Manager Essentials
- CiscoWorks CiscoView
- SNMP v1, v2, and v3
- RMON I and II
- RFC 1213-MIB (MIB II)
- UDP-MIB
- TCP-MIB
- BGP4-MIB
- OSPF-MIB
- LLDP-MIB
- CISCO-FLASH-MIB
- CISCO-IMAGE-MIB
- RFC 2233 (IF-MIB)
- CISCO-CONFIG-MAN-MIB
- CISCO-MEMORY-POOL
- CISCO-CDP-MIB
- RMON-MIB lite (RFC 1757)

- RMON2-MIB lite (RFC 2021)
- HC-RMON-MIB
- SMON-MIB
- ENTITY-MIB (V1-RFC 2037) (V2- RFC 2737)
- CISCO-PROCESS-MIB
- CISCO-CONFIG-COPY-MIB
- CISCO-ENTITY-EXT-MIB
- CISCO-ENTITY-ASSET-MIB
- CISCO-ENTITY-FRU-CONTROL-MIB
- CISCO-ENTITY-SENSOR-MIB
- CISCO-ENVMON-MIB
- BRIDGE-MIB (RFC 1493)
- CISCO-PAGP-MIB
- CISCO-PRIVATE-VLAN-MIB
- CISCO-STP-EXTENSIONS-MIB
- CISCO-VLAN-MEMBERSHIP-MIB
- CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB
- IGMP-MIB
- CISCO-ENTITY-VENDORTYPE-OID-MIB
- CISCO-SYSLOG-MIB
- CISCO-BULK-FILE-MIB
- CISCO-CLASS-BASED-QOS-MIB
- CISCO-FTP-CLIENT-MIB
- CISCO-HSRP-MIB
- CISCO-IGMP-FILTER-MIB
- CISCO-IPMROUTE-MIB
- CISCO-PORT-SECURITY-MIB
- CISCO-RMON-CONFIG-MIB
- CISCO-VTP-MIB
- ETHERLIKE-MIB
- EXPRESSION-MIB
- CISCO-PORT-STORM-CONTROL-MIB
- Static multicast MAC address in BRIDGE-MIB

**Industry Standards**

- Ethernet: IEEE 802.3 and 802.3an (10GBASE-T)
- Fast Ethernet: IEEE 802.3u and 100BASE-TX
- Gigabit Ethernet: IEEE 802.3z and 802.3ab
- 10 Gigabit Ethernet: IEEE 802.3ae
- IEEE 802.1D Spanning Tree Protocol

- IEEE 802.1w rapid reconfiguration of spanning tree
- IEEE 802.1s multiple VLAN instances of spanning tree
- IEEE 802.3ad LACP
- IEEE 802.1p class of service (CoS) prioritization
- IEEE 802.1Q VLAN
- IEEE 802.1X user authentication
- 1000BASE-X (SFP)
- 1000BASE-SX
- 1000BASE-LX/LH
- 1000BASE-ZX
- RMON I and II standards

### Optics Support

SFPs used with Cisco TwinGig Converter Module for Gigabit Ethernet connectivity (supported only in WS-X4908-10GE(=) half card):

- GLC-T: 1000BASE-T SFP
- GLC-SX-MM: Gigabit Ethernet SFP, LC connector, and SX transceiver
- GLC-LH-SM: Gigabit Ethernet SFP, LC connector, and LX/LH transceiver
- GLC-BX-D: 1000BASE-BX10 SFP module for single-strand SMF, 1490-nm TX/1310-nm RX wavelength
- GLC-BX-U: 1000BASE-BX10 SFP module for single-strand SMF, 1310-nm TX/1490-nm RX wavelength
- GLC-ZX-SM: 1000BASE-ZX SFP
- Cisco (CWDM) SFP solution

### X2 Modules for 10 Gigabit Ethernet Connectivity

- X2-10GB-LR=: 10GBASE-LR X2 module
- X2-10GB-CX4=: 10GBASE-CX4 X2 module
- X2-10GB-LX4=: 10GBASE-LX4 X2 module
- X2-10GB-SR=: 10GBASE-SR X2 module
- X2-10GB-ER=: 10GBASE-ER X2 module
- X2-10GB-LRM=: 10GBASE-LRM X2 module
- X2-10GB-ZR=: 10GBASE-ZR X2 module
- DWDM-X2 =: 10GBASE-DWDM X2 module

### Cisco SFP+ Transceiver Modules for Cisco OneX Converter Module

- SFP-10G-SR=: Cisco 10GBASE-SR SFP+ module for multimode fiber (MMF)
- SFP-H10GB-CU1M: 10GBASE-CU SFP+ Cable 1 meter (Version -02)
- SFP-H10GB-CU3M: 10GBASE-CU SFP+ Cable 3 meter (Version -02)
- SFP-H10GB-CU5M: 10GBASE-CU SFP+ Cable 5 meter (Version -02)

### Product Specifications

Tables 5 and 6 list the specifications for the Cisco Catalyst 4900M.

**Table 5.** Product Specifications: Dimensions

Product Name	Maximum Overall Dimension (H x W x D [mm])
4900M 8-port base system	3.5 (89) x 17.2 (437) x 17.9 (455)
4900M 20-port 10/100/1000 RJ-45 half card	1.9 (49) x 7.4 (188) x 8.2 (209)
4900M 4 port 10GE half card with X2 interfaces	1.9 (49) x 7.4 (188) x 8.2 (209)
4900M 8 port 10GE half card with X2 interfaces	1.9 (49) x 7.4 (188) x 8.2 (209)
4900M 8 port 10GBASE-T RJ-45 half card	1.9 (49) x 7.4 (188) x 8.2 (209)
4900M AC power supply	1.9 (49) x 7.3 (186) x 10.7 (272)
4900M DC power supply	1.9 (49) x 7.3 (186) x 10.7 (272)
4900M spare fan tray	3.4 (87) x 2.5 (64) x 17.8 (453)

**Table 6.** Product Specifications: Weight

System Configurations	Weight
Cisco Catalyst 4900M 8-port base unit plus fan (no power supply)	25.0 lb (11.3 kg)
Cisco Catalyst 4900M 8-port base unit plus fan and 1 AC power supply	29.5 lb (13.4 kg)
Cisco Catalyst 4900M 8-port base unit plus fan and 2 AC power supplies	34.0 lb (15.4 kg)
Cisco Catalyst 4900M 4-port 10 Gigabit Ethernet half card with X2 interfaces	1.5 lb (0.7 kg)
Cisco Catalyst 4900M 20-port 10/100/1000 RJ-45 half card	1.5 lb (0.7 kg)
Cisco Catalyst 4900M 8-port 10 Gigabit Ethernet half card with X2 interfaces	2.5 lb (1.1 kg)
Cisco Catalyst 4900M 8-port 10GBase-T RJ-45 half card	2.5 lb (1.1 kg)

### Indicator and Port Specifications

- System status: Green (operational), red (faulty)
- Console: RJ-45 socket
- Reset (switch recessed for protection)
- Image management port: 10/100/1000BASE-T (RJ-45 socket) data terminal equipment (DTE); green (good), orange (disabled), and off (not connected)
- Air flow specifications (average):
  - Air flow at 25°C (77°F) is approximately 77 cubic feet per minute (cfm)
  - Air flow at 55°C (131°F) is approximately 150 to 160 cfm

Table 7 shows the air flow specifications by speed.

**Table 7.** Air Flow Specifications by Speed

Speed Level	RPM	Airflow (ft <sup>3</sup> /minute [m <sup>3</sup> /minute])
0	4953	77.7 (2.2)
1	7109	118.4 (3.4)
2	7752	127.6 (3.6)
3	9449	151.7 (4.3)

### Power Supply Specifications

The Cisco Catalyst 4900M offers a choice of 1000W AC or DC power supplies. The switch can operate with one power supply present. When two power supplies are installed, the switch shares the power load between the two power supplies (Table 8).

**Table 8.** AC and DC Power Supply Specifications

Item	1000W AC	1000W DC
Input current	14.12A root mean square maximum at 85 VAC input	31.60A maximum at -40.5 VDC input
Output current	Maximum 80.0A	Maximum 80.0A
Weight	4.5 lb (2.0 kg)	4.5 lb (2.0 kg)
Heat dissipation	Maximum use 818.88 British thermal units (BTUs) per hour	Maximum use 1091.84 BTUs per hour

**Power Use by Configuration**

- Forty 10/100/1000 ports and eight 10 Gigabit Ethernet (X2) ports at normal operating temperature: 328W
- Sixteen 10 Gigabit Ethernet ports at normal operating temperature: 282W
- Twenty-four 10 Gigabit Ethernet ports at normal operating temperature: 368W
- Sixteen 10GBASE-T ports and eight 10 Gigabit Ethernet (X2) ports at normal operating temperature: 446W
- Eight 10GBASE-T ports, twenty 10/100/1000 ports, and eight 10 Gigabit Ethernet (X2) ports at normal operating temperature: 387W
- Eight 10GBASE-T ports and sixteen 10 Gigabit Ethernet (X2) ports at normal operating temperature: 407W

**Software Requirements**

The Cisco Catalyst 4900M is supported only in Cisco IOS Software. The minimum software version for the Cisco Catalyst 4900M is Cisco IOS Software Release 12.2(46)SG

**Environmental Conditions**

- Operating temperature: 32° to 104°F (0° to 40°C)
- Storage temperature: -40° to 167°F (-40° to 75°C)
- Relative humidity: 10 to 90 percent, noncondensing
- Operating altitude: -60 to 2000m (-197 to 6562 ft)

**Regulatory Standards Compliance**

Table 9 summarizes Cisco Catalyst 4900M compliance with regulatory standards.

**Table 9.** Cisco Catalyst 4900M Regulatory Standards Compliance

Specification	Standard
Regulatory compliance	<ul style="list-style-type: none"> <li>• CE marking</li> </ul>
Safety	<ul style="list-style-type: none"> <li>• UL 60950</li> <li>• CAN/CSA-C22.2 No. 60950</li> <li>• EN 60950</li> <li>• IEC 60950</li> <li>• AS/NZS 60950</li> </ul>



<b>Electromagnetic compliance (EMC)</b>	<ul style="list-style-type: none"> <li>• KN22 Class A</li> <li>• FCC Part 15 (CFR 47) Class A</li> <li>• ICES-003 Class A</li> <li>• EN55022 Class A</li> <li>• CISPR22 Class A</li> <li>• AS/NZS CISPR22 Class A</li> <li>• VCCI Class A</li> <li>• EN 55022</li> <li>• EN 55024</li> <li>• EN 61000-6-1</li> <li>• EN 50082-1</li> <li>• EN 61000-3-2</li> <li>• EN 61000-3-3</li> <li>• CISPR24</li> </ul>
<b>Industry EMC, safety, and environmental standards</b>	<ul style="list-style-type: none"> <li>• SR-3580 NEBS level 3 (GR-63-CORE, issue 3, and GR-1089-CORE, issue 4)</li> <li>• Telecommunications Carrier Group (TCG) Checklist</li> <li>• ATT TP76200 level 3 and TCG Checklist</li> <li>• ETS 300 019-1-1, Class 1.2 Storage</li> <li>• ETS 300 019-1-2, Class 2.3 Transportation</li> <li>• ETS 300 019-1-3, Class 3.2 Stationary Use</li> </ul>

### Cisco IOS Software Packaging for the Cisco Catalyst 4900M

Cisco provides a Cisco IOS Software package for the Cisco Catalyst 4900M, creating a foundation for features and functions and offering consistency across all Cisco Catalyst switches. The Cisco IOS Software release is designated Release 12.2SG. The Cisco Catalyst 4900M software packages support different features, depending on the image:

- The IP Base image does not support the following routing-related features: BGP, EIGRP, OSPF, and VRF-lite).
- The IP Base image supports EIGRP stub, RIP v1 and v2, and static routes for Layer 3 routing on all Cisco Catalyst 4900M Switches.

The Enterprise Services image supports all Cisco Catalyst 4900M software features based on Cisco IOS Software, including enhanced routing. Table 3 earlier in this document provides a more detailed description of the feature differences between the IP Base and Enterprise Services images.

### Ordering Information

Table 10 provides ordering information.

**Table 10.** Ordering Information

Product Name	Part Number
Cisco Catalyst 4900M 8-port base system	WS-C4900M
Cisco Catalyst 4900M 20-port 10/100/1000 RJ-45 half card	WS-X4920-GB-RJ45 (=)
Cisco Catalyst 4900M 4 port 10GE half card with X2 interfaces	WS-X4904-10GE (=)
Cisco Catalyst 4900M 8 port 10GE half card with X2 interfaces	WS-X4908-10GE (=)
Cisco Catalyst 4900M 8 port 10GBASE-T RJ-45 half card <sup>2</sup>	WS-X4908-10G-RJ45 (=)
Cisco Catalyst 4900M AC power supply	PWR-C49M-1000AC(=)
Cisco Catalyst 4900M AC power supply redundant	PWR-C49M-1000AC/2
Cisco Catalyst 4900M DC power supply	PWR-C49M-1000DC (=)
Cisco Catalyst 4900M DC power supply redundant	PWR-C49M-1000DC/2
Cisco Catalyst 4900M spare fan tray	WS-X4992=

<sup>2</sup> 1HCY2010

Cisco TwinGig Converter Module	CVR-X2-SFP=
Cisco OneX Converter Module	CVR-X2-SFP10G=
Cisco Catalyst 4900M IOS IP Base without CRYPTO	S49MIPB-12246SG(=)
Cisco Catalyst 4900M IOS IP Base SSH	S49MIPBK9-12246SG(=)
Cisco Catalyst 4900M IOS Enterprise Services without CRYPTO	S49MES-12246SG(=)
Cisco Catalyst 4900M IOS Enterprise Services SSH	S49MESK9-12246SG(=)
Cisco Catalyst 4900M IOS IP Base without CRYPTO	S49MIPB-12250SG(=)
Cisco Catalyst 4900M IOS IP Base SSH	S49MIPBK9-12250SG(=)
Cisco Catalyst 4900M IOS Enterprise Services without CRYPTO	S49MES-12250SG(=)
Cisco Catalyst 4900M IOS Enterprise Services SSH	S49MESK9-12250SG(=)
Cisco Catalyst 4900M IOS IP Base without CRYPTO	S49MIPB-12252SG(=)
Cisco Catalyst 4900M IOS IP Base SSH	S49MIPBK9-12252SG(=)
Cisco Catalyst 4900M IOS Enterprise Services without CRYPTO	S49MES-12252SG(=)
Cisco Catalyst 4900M IOS Enterprise Services SSH	S49MESK9-12252SG(=)

The Cisco Catalyst 4900M can be ordered as a fully configured system, including all port cards and optics, or as spares. Part numbers for spares have = at the end.

### Service and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment (ROI). This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

### Warranty

The Cisco Catalyst 4900M is warranted for one year. The warranty includes hardware replacement with a 10-day turnaround from receipt of a return materials authorization (RMA).

### Cisco Technical Support Services

Cisco Technical Support Services help ensure that your Cisco products operate efficiently, remain highly available, and benefit from current system software to help you effectively manage your network service while controlling operational costs. (See Tables 11 and 12.)

Cisco Technical Support Services provide significant benefits that go beyond what is offered under the Cisco warranty. Services available under a Cisco SMARTnet<sup>®</sup> Service contract that are not covered under a warranty include the following:

- Latest software updates
- Rapid replacement of hardware with next-day, 4-hour, or 2-hour dispatch options
- Ongoing technical support through Cisco Technical Assistance Center (TAC)
- Registered access to <http://www.cisco.com>

**Table 11.** Technical Support Services Components

Feature	Benefit or Advantage
<b>Software support</b>	Software support offers maintenance and minor and major updates for licensed feature sets. Downloading new maintenance releases, patches, or updates of Cisco IOS Software helps enhance and extend the useful life of Cisco devices. Through major software updates, it is possible to extend the life of equipment and maximize application technology investments by: <ul style="list-style-type: none"> <li>• Adding new functions that, in many cases, require no additional hardware investment</li> <li>• Increasing the performance of current functions</li> <li>• Enhancing network or application availability, reliability, and stability</li> </ul>
<b>Cisco TAC support</b>	With more than 1000 highly trained customer support engineers, 390 Cisco CCIE® experts, and access to 13,000 R&D engineers, Cisco TAC complements your in-house staff with a high level of knowledge in data, voice, and video communications networking technology. Its sophisticated call-routing system quickly routes calls to the correct technology personnel. Cisco TAC is available 24 hours a day, 365 days a year.
<b>Cisco.com</b>	This award-winning website provides 24-hour access to an extensive collection of online product and technology information, interactive network management and troubleshooting tools, and knowledge-transfer resources that can help customers reduce costs by increasing staff self-sufficiency and productivity.
<b>Advance hardware replacement</b>	Advance replacement and onsite field engineer options provide fast access to replacement hardware and field resources for installing hardware, minimizing the risk of potential network downtime.

**Table 12.** Technical Support Services Competitive Differentiators

Feature	Benefit or Advantage
<b>Worldwide virtual lab</b>	This extensive lab of Cisco equipment and Cisco IOS Software versions provides an invaluable engineering resource and knowledge base for training, product information, and recreation and testing of selected network concerns to help decrease time to resolution.
<b>Cisco TAC training</b> <ul style="list-style-type: none"> <li>• Boot camps</li> <li>• Tech calls</li> <li>• Tech forums</li> </ul>	Cisco is committed to providing customers the latest in technology support. These TAC training programs assist customers in case avoidance and provide knowledge transfer of Cisco networking expertise.
<b>Cisco Live</b>	A powerful suite of Internet-enabled tools with firewall-friendly features, these secure, encrypted Java applets can turn a simple phone call into an interactive collaboration session, allowing a customer and Cisco TAC support engineer to work together more effectively.
<b>Global logistics</b>	This feature delivers award-winning, worldwide hardware-replacement support through 650 depots covering 120 countries with a \$2.3 billion investment in inventory, taking advantage of 10,000 onsite field engineers.
<b>Cisco IOS Software</b>	Cisco IOS Software employs 100 discrete technologies with more than 2000 features. Each year, 400 new features are added. Cisco IOS Software is installed in more than 10 million devices and is running on more than 10,000 networks worldwide. It operates on the world's largest IPv6 and VoIP networks and in all major service provider networks worldwide.

## For More Information

To learn more about how you can take advantage of Cisco Technical Support Services, talk to your Cisco representative or visit Cisco Technical Support Services at [http://www.cisco.com/en/US/products/svcs/ps3034/ps2827/serv\\_category\\_home.html](http://www.cisco.com/en/US/products/svcs/ps3034/ps2827/serv_category_home.html).

For additional information about the Cisco Catalyst 4900 Series, visit <http://www.cisco.com/go/catalyst4900>.

For additional information about Cisco products, contact:

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- Europe: +32 2 778 4242
- Australia: +612 9935 4107
- Other: 408 526-7209
- <http://www.cisco.com>



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