



Overview

The Cisco® Catalyst® 4900M is part of the Cisco data center switching portfolio. The Cisco Catalyst 4900M Switch is designed as a top-of-rack access layer switch for use with rack-optimized servers. The Cisco Catalyst 4900M is purpose built as a top-of-rack switch and delivers the buffering, latency, and performance characteristics necessary to excel in that role.

The Cisco Catalyst 4900M is a two-rack-unit (2RU) top-of-server rack Ethernet switch optimized for 10/100/1000 and 10 Gigabit Ethernet access devices. It is unique in the top-of-rack space because it is semi-fixed. This flexibility provides a cost-effective and modular migration path from Gigabit Ethernet to 10 Gigabit Ethernet.

The design of the Cisco Catalyst 4900M addresses several common challenges data centers face, offering these benefits:

- Offers hot-swappable flexibility, providing high availability in a dynamic environment along with investment protection in environments with a constantly changing mix of servers
- Provides optional half-cards that can be changed as new servers require different media and port speeds while maintaining the investment of the Cisco Catalyst 4900M base unit
- Designed with 16 MB of shared buffers to help prevent performance degradation under heavy traffic loads and help ensure that revenue-producing packets are not lost due to insufficient buffering
- Eliminates the need to deal with multiple OS and management systems simply to provide flexible access switch transport options

The switch has 8 fixed wire-speed 10 Gigabit Ethernet ports typically used to uplink to an aggregation switch. The switch also features two half-slots that can be filled with any combination of the following:

- 20-port wire-speed 10/100/1000 (RJ-45) half-card
- 4-port wire-speed 10 Gigabit Ethernet (X2) half-card
- 8-port (2:1) 10 Gigabit Ethernet (X2) half-card (Cisco TwinGig Converter Module compatible)

Infrastructure Simplification and Flexibility

- Provides flexible 10 Gigabit Ethernet configurations ranging from 8 to 24 ports
- Offers more than nine combinations of media types, including Gigabit Ethernet copper and fiber interfaces and 10 Gigabit Ethernet copper and fiber interfaces
- Delivers an investment protection path for 10GBASE-T access upgradability

Figure 1. The Cisco Catalyst 4900M offers significant mix-and-match flexibility



Figure 2. Cisco Catalyst 4900M maximized for 10GbE server connectivity



Figure 3. Cisco Catalyst 4900M can support 40 ports of 10/100/1000 Ethernet at wire speed without oversubscription



Performance and Scalability

- Offers wire-speed Layer 2+ Ethernet switching with 320 Gbps and 250 million packets per second (mpps) of aggregate capacity in 2RU
- Eliminates access-port-to-uplink-port oversubscription bottlenecks with up to 40 ports of wire-speed 10/100/1000 at the access to 8 wire-speed 10 Gigabit Ethernet uplinks
- Achieves a latency of less than 5 microseconds with 64-byte packets
- Provides Cisco TwinGig Converter Module support on the 8-port X2 half-cards, allowing up to 32 Gbps over fiber optics per switch
- Allows control of transmit queue sizing: default size of TX queue is 8000 packets (irrespective of packet size); this can be configured into up to 8 queues with different sizes and graded priorities

Continuous Operation

- Provides online hot addition and deletion of half-cards for in-service hardware upgrades
- Supports dual, hot swap power supplies

Figure 4. Cisco Catalyst 4900M Switch in a Data Center Network

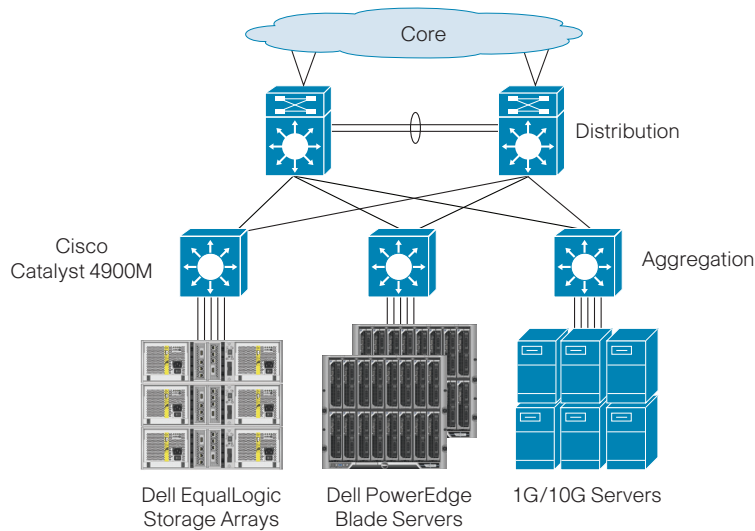


Table 1. Software Configuration for the Cisco Catalyst 4900M Series Switch

Software Image	Description
IP Base image	Standard Layer 3 image, including Routing Information Protocol Version 1 (RIPv1), RIPv2, static routes, and Enhanced Interior Gateway Routing Protocol (EIGRP) stub

Table 2. Transceiver Modules

Cisco Catalyst 4900M Transceiver Modules	Part Number
10GBASE-CX4 X2 Module	X2-10GB-CX4
10GBASE-LX4 X2 Module	X2-10GB-LX4
10GBASE-SR X2 Module	X2-10GB-SR
10GBASE-LRM X2 Module	X2-10GB-LRM
TwinGig Converter Module (Up to 2 per Quadrant)	CVR-X2-SFP=
GE SFP, LC Connector SX Transceiver	GLC-SX-MM
GE SFP, LC Connector LX/LH Transceiver	GLC-LH-SM
1000BASE-T SFP	GLC-T

Table 3. Comparison of Cisco Catalyst 4948-10GE and Cisco Catalyst 4900M Switch

Feature and Description	Cisco Catalyst 4948-10GE	Cisco Catalyst 4900M
Switching Capacity	136 Gbps	320 Gbps
Throughput	102 Mpps	250 Mpps for IPv4/125 Mpps for IPv6
Height	1RU	2RU
Modular Half-Card Slots	0	2
Maximum 10/100/1000 Ports	48	40
Maximum 10 Gigabit Ports	2	24
Maximum Gigabit Ethernet (Fiber) Ports	0	32 (TwinGig)
Cisco TwinGig Converter Module Support	No	Yes (Half-Cards only)
Uplink Optic Types	2 X2 (10 Gigabit Ethernet) optics	8 X2 (10 Gigabit Ethernet) optics
Multilayer Switching	IP Base and Enterprise Services Options	IP Base and Enterprise Services Options
Shared Buffer	16 MB	16 MB
CPU	666 MHz	1.3 Ghz
Synchronous Dynamic RAM (SDRAM)	256 MB	512 MB
Active VLANs	2048	4196
Multicast Entries	28,000 (Layer 3)/16,000 (Layer 2)	70000 for IPv4/35000 for IPv6
Per VLAN Spanning Tree (PVST) and VLAN IDs	4096	4096
Spanning Tree Protocol Instances	1500	3000
Switched Virtual Interfaces (SVIs)	2000	4000
Security and Quality-of-Service (QoS) Hardware Entries	32,000	12,8000
Mac Addresses	55,000	55,000
Switched Port Analyzer (SPAN)	2 ingress, 4 egress	8 ingress and 8 egress
USB Port	No	Yes
Compact Flash Support	No	Yes
System Reset Button	No	Yes
Minimum Software Requirement	Cisco IOS® Software Release 12.2(25)EWA or later	Cisco IOS Software Release 12.2(46)SG or later



Cisco Catalyst 4900M



THIRD PARTY PRODUCT INFORMATION
BROUGHT TO YOU COURTESY OF DELL

At-A-Glance

Table 4. 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 10GbE half card with X2 interfaces	WS-X4904-10GE (=)
Cisco Catalyst 4900M 8 port 10GbE half card with X2 interfaces	WS-X4908-10GE (=)
Cisco Catalyst 4900M AC Power Supply Redundant	PWR-C49M-1000AC/2
Cisco® TwinGig Converter Module	CVR-X2-SFP=

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.

For More Information

Please visit www.dell.com/ciscosolutions.

The information contained in this document, including all instructions, cautions, and regulatory approvals and certifications, is provided by Cisco and has not been independently verified or tested by Dell. Dell cannot be responsible for damage caused as a result of either following or failing to follow these instructions. All statements or claims regarding the properties, capabilities, speeds, or qualifications of the part referenced in this document are made by Cisco and not by Dell. Dell specifically disclaims knowledge of the accuracy, completeness, or substantiation for any such statements. All questions or comments relating to such statements or claims should be directed to Cisco. Visit www.dell.com for more information.