The Cisco® Catalyst® 4948-10GE Switch (Figure 1) is a fixed configuration switch offering high-performance, rack-optimized server switching for data centers of all sizes.

Figure 1. Cisco Catalyst 4948-10GE Switch

Key Features

- Low-latency and wire-speed switching
- Up to 48 10/100/1000 ports with two 10 Gigabit Ethernet ports
- Dual, hot-swappable internal AC power supply
- Hot-swappable fan trays

Key Benefits

Exceptional Reliability—Redundant hot-swappable internal AC offers nonstop operation; 1 + 1 power supply design provides A-to-B failover when power supplies are connected to different circuits; a hot-swappable fan tray includes redundant fans for additional serviceability and availability.

Wire-Speed Performance—Wire-speed throughput on all ports up to 136 Gbps with low latency for data-intensive applications; switching performance is maintained regardless of the number of route entries or services enabled; hardware-based Cisco Express Forwarding routing architecture allows for increased scalability and performance.

Layer 2–3 Services—Advanced routing protocols such as Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Border Gateway Protocol (BGP), static routing, and Policy Based Routing (PBR) increase network scale; equal-cost routing as well as multicast routing such as Protocol Independent Multicast (PIM) maximize network resources; Virtual Route Forwarding lite (VRF-lite) secures traffic.

Comprehensive Management—The Cisco Catalyst 4948-10GE Switch can be managed with Cisco Network Assistant, CiscoWorks solutions, and embedded CiscoView; includes a single, dedicated 10/100 console port and a single, dedicated 10/100 management port for offline disaster recovery; remote in-band management is available with Simple Network Management Protocol (SNMP), Telnet client, BOOTP, and Trivial FTP (TFTP); support for local or remote out-of-band management delivered through a terminal or modem attached to the console interface; management port helps enable switch to reload a new image from a TFTP server within seconds.

Security—Dynamic Host Configuration Protocol (DHCP) snooping allows only trusted ports to relay DHCP messages, eliminating rogue DHCP servers; Network Access Control (NAC) prevents the propagation of costly worms and viruses; Dynamic ARP inspection and IP Source Guard prevent against man-in-the-middle attacks; 802.1x and identity-based network services allow only authorized persons on the network; port security prevents MAC address flooding attacks. Control Plane Policing prevents DoS attack.

Customers

The Cisco Catalyst 4948-10GE Switch is ideal for:

- Data center deployments requiring wire-speed, top-of-rack aggregation for servers
- Customers who expect resiliency, security, and scalability

Table 1. 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)

Cisco Catalyst 4948-10GE

Table 1. Comparison of Cisco Catalyst 4948-10GE and Cisco Catalyst 4900M Switch (continued)

Feature and Description	Cisco Catalyst 4948-10GE	Cisco Catalyst 4900M
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

Software Options

The Cisco Catalyst 4948-10GE Switch can be purchased with the IP Base or Enterprise Services licenses or IP Base Service licenses can be upgraded in the field to the Enterprise Service license.
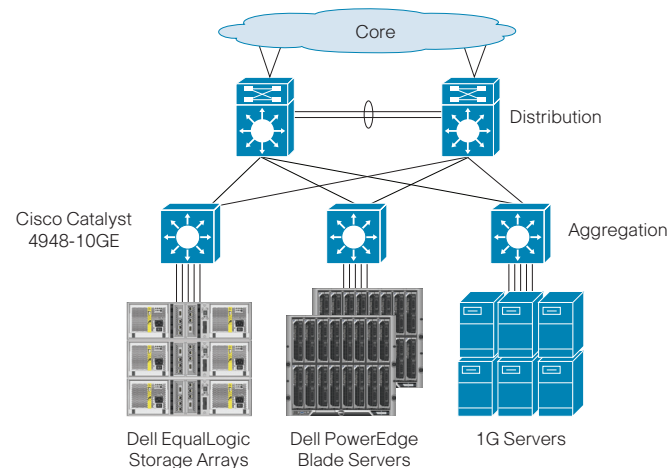
Table 2. Software Configuration Options for the Cisco Catalyst 4948-10GE Switch

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
Enterprise Services image	Enhanced Layer 3 image, including Open Shortest Path First (OSPF), EIGRP, and Border Gateway Protocol (BGP); also includes all IP Base image features

Table 3. Transceiver Modules

Cisco Catalyst 4948-10GE Transceiver Modules	Part Number
10GBASE-CX4 X2 Module	X2-10GB-CX4
10GBASE-SR X2 Module	X2-10GB-SR
10GBASE-LX4 X2 Module	X2-10GB-LX4
10GBASE-LR X2 Module	X2-10GB-LR

Figure 2. Cisco Catalyst 4948-10GE Switch in a Data Center Network

Core

Distribution

Cisco Catalyst 4948-10GE

Aggregation

Dell EqualLogic Storage Arrays

Dell PowerEdge Blade Servers

1G Servers

Table 4. Ordering Information for the Cisco Catalyst 4948 10 Gigabit Ethernet Switch

Part Number	Description
WS-C4948-10GE-S	Cisco Catalyst 4948-10GE, IP Base Image (RIP, static routes,), one AC power supply, fan tray
WS-C4948-10GE-E	Cisco Catalyst 4948-10GE, Enterprise Services Image (OSPF, EIGRP, IS-IS, BGP, IPX, AppleTalk), one AC power supply, fan tray
PWR-C49-300AC/2	Optional second power supply. Catalyst 4948 300-Watt Redundant AC Power Supply
X2 Options	
X2-10GB-CX4	10GB CX4 module
X2-10GB-LX4	10GB LX4 module
X2-10GB-SR	10GB short-reach (SR) module

For More Information

Please visit www.dell.com/ciscosolutions