

Catalyst 2948G Enterprise Desktop Switching With Modular Gigabit Ethernet Uplinks

CISCO'S CATALYST® 2948G OFFERS FIXED, HIGH-PERFORMANCE, HIGH-DENSITY 10/100/1000-MBPS ETHERNET FOR DEDICATED DESKTOP SWITCHING.

The Catalyst 2948G is a dedicated Ethernet switch featuring high-performance Layer 2 switching for the wiring closet, with low cost per port and advanced and proven software capable of supporting a wide variety of switching features. This new Catalyst switch provides an efficient, simple, and cost-effective method for improving performance and eliminating network congestion with high-speed, high-performance, Layer 2 intelligent enterprise switching. Fully integrated into the Catalyst family of switches, the Catalyst 2948G uses the same Catalyst system software as the industry-leading Catalyst 5000/5500 Series, thereby ensuring complete interoperability with existing Catalyst switches.

The Catalyst 2948G features:

- Dedicated 48-port 10/100-Mbps Ethernet and 2-port 1000BaseX Gigabit Ethernet with flexible media interfaces
- Feature-rich enterprise Catalyst system software
- Comprehensive management tools based on standard CiscoWorks2000 applications
- 24-Gbps nonblocking switch fabric
- Redundant, hot-swappable external power supply and other fault-tolerant features

Desktop Connection Protection: Catalyst 2948G

Dedicated 48-Port 10/100 for the Wiring Closet

The Catalyst 2948G is a fixed-configuration Layer 2 Ethernet switch with 48 RJ-45 10/100 ports and 2 Gigabit Ethernet uplink ports with modular gigabit interface converter (GBIC) interfaces.

Flexible, Full-Duplex Gigabit Uplinks

Each Catalyst 2948G comes standard with two Gigabit uplink ports that can be configured with a variety of different interfaces, depending upon the customer's network requirements. Utilizing advanced GBIC technology, customers can choose either short-wave (1000BaseSX) or long-wave (1000BaseLX/LH) gigabit interfaces, depending on network configuration requirements. And if, in the future, customers' gigabit interface requirements change, they can easily (and inexpensively) change their GBICs. (Note that GBICs are sold separately from the Catalyst 2948G.)

Industry-Leading Catalyst System Software

The Catalyst 2948G supports the full set of features found in enterprise Catalyst system software. Not only does this feature ensure interoperability with other Catalyst switches (such as the Catalyst 4000 Series), but it provides the Catalyst 2948G with the most comprehensive set of Layer 2 features available in the industry. Major software feature categories supported by this switch include:

- Advanced scalability (such as Fast EtherChannel® technology, dynamic virtual LANs [VLANs], 802.1Q trunking, and so on)
- Bandwidth management (quality of service [QoS], protocol filtering, link load balancing, and so on)
- Network resiliency (UplinkFast, PortFast, spanning tree, and so on)
- Security (per-port security, authentication, IP permit lists, and so on)

Catalyst 2948G Enterprise Desktop Switch—Performance, Proven Software, and Value



High-Performance Nonblocking Architecture

The Catalyst 2948G supports a high-performance architecture with 24-Gbps bandwidth capacity. The switch fabric is capable of supporting all 48 10/100 ports and Gigabit uplinks simultaneously at wire speed. The high-performance fabric on the 2948G will minimize traffic congestion from growth and improve the overall network response time.

Built-In Fault Tolerance

The Catalyst 2948G supports a variety of fault-tolerant features, including an available external redundant power supply (sold separately), support of multiple load-sharing trunks (Fast EtherChannel technology), multiple spanning trees, and fast-convergence software tools such as PortFast and UplinkFast. This wide range of hardware and software fault-tolerant tools enable the Catalyst 2948G to provide the platform resiliency and fault tolerance required in today's mission critical networks.

Comprehensive Network Management of CiscoWorks2000

Catalyst 2948G Series products are managed by Cisco's powerful CiscoWorks 2000 network management products (option). These management products are focused on the day-to-day network operations functions such as:

- Checking on device availability and configuration changes
- Provisioning of VLANs across multiple devices concurrently
- The representation of Layer 2 networks, both physically and logically

The Essentials product suite leverages the power of the intranet with browser-based access anywhere within the network. Network managers can use any browser console, simply identify who they are via the access control interface, and immediately begin checking on the uptime of each device, the active software versions that are running the Catalyst 2948G, and print a Year 2000-compliant report. For drill-down real-time device status

information, the network operations staff can launch Cisco's award-winning CiscoView application from their fault-management station and at a glance check on the health of the power supplies, line cards, and the operational status of each port.

For more sophisticated network-wide information, network managers can launch the CiscoWorks for Switched Internetworks-Campus (CWSI-Campus) product bundle, which automatically discovers the physical and logical representations of the Catalyst switch networks. This object-based discovery system offers detailed information on the location and type of each switch within the network, the type of links that connect the switches together, and displays integrity reports on the configurations between each switch. All this information is provided graphically within the topology interface with search and location utilities. This topology interface offers a convenient launching point for other applications within CWSI campus, including the Remote Monitoring (RMON) based traffic-analysis application, the network-wide user-location application, and the VLAN application, which displays the logical configuration and spanning-tree forwarding path information

Benefits

The Catalyst 2948G is a cost-effective, high-performance, feature-rich Ethernet switch ideally suited for customers who require Layer 2 switching in increments of 48 10/100-Mbps Fast Ethernet desktop connections with the safety of modular Gigabit Ethernet uplinks. This switch offers bandwidth, price/performance value, and enterprise software protection, all in a complete switch solution for the wiring closet.

Gigabit Ethernet Link Distances

Fiber Core:	62.5um Multimode		50um Multimode		9/10um Singlemode
Fiber Modal Bandwidth	160/500 MHz-km	200/500 MHz-km	400/400 MHz-km	500/500 MHz-km	NA
1000BASE-SX	220m	275m	500m	550m	NA
1000BASE-LX/LH ¹	550m	550m	550m	550m	10km

1. Cisco 1000BaseLX/LH interfaces fully comply with the IEEE 802.3z 1000BaseLX standard. However, their higher optical quality allows them to reach 10 km over singlemode fiber vs. the 5 km specified standard.

Technical Specifications for the Catalyst 2948G

Standard Network Protocols

- Ethernet: IEEE 802.3, 10BaseT
- Fast Ethernet: IEEE 802.3u, 100BaseTX
- Gigabit Ethernet: IEEE 802.3z, IEEE 802.3x
- 1000BaseX (GBIC)
 - 1000BaseSX
 - 1000BaseLX/LH
- VLAN Trunking/Tagging: IEEE 802.1Q
- Spanning-Tree Protocol: IEEE 802.1D

Network Management

- CiscoWorks2000 Network Management Suite, Resource Manager Essentials includes:
 - Inventory Manager
 - Change audit
 - Device Configuration Manager
 - Software Image Manager
 - Availability Manager
 - Syslog Analyzer
 - Cisco Management Connection
- CiscoWorks2000 Network Management Suite, CWSI campus includes:
 - Network topology discovery and display services
 - VLAN provisioning and logical display representation
 - Traffic monitoring and performance assessment
 - End-station tracking with search utilities
 - ATM and LANE service configuration and performance monitoring
 - CiscoView graphical device management
 - Network topology integrity checking
- Cisco Discovery Protocol
- Cisco's Virtual Trunking Protocol (VTP)
- Simple Network Management Protocol (SNMP) agent v1 (RFCs 1155-1157)
- SNMPv2c
- Cisco workgroup Management Information Base (MIB)
- Ethernet MIB (RFC 1643)
- Ethernet repeater MIB (RFC 1516)
- SNMP MIB II (RFC 1213)

- RMON (RFC 1757)
- RMON II (RFC 2021)
- Interface table (RFC 1573)
- Bridge MIB (RFC 1493)
- Station Management (SMT) 7.3 (RFC 1285)
- Switched Port Analyzer (SPAN)
- Enhanced Switched Port Analyzer (EnhancedSPAN)
- Port snooping and connection steering
- Text-based command-line interface based on the familiar Catalyst 5000 Series interface
- Standard Cisco IOS® security capabilities: passwords and TACACS+
- Telnet, Trivial File Transfer Protocol (TFTP), BOOTP for management access

EtherChannel®

- Fast EtherChannel: All 10/100 mbps ports
- Gigabit EtherChannel: All 1000 mbps ports
- PAgP: Yes

Y2K

- Y2K compliant: Yes

Memory Specifications

- Buffering: 8 MB (Shared)
- NVRAM: 512 KB
- FLASH: 12 MB
- SDRAM: 64 MB

Switching Specifications

- MAC Addresses: 16,000
- Virtual LANs (VLANs): 1,024
- Fabric: Store-and-Forward
- Queues: Dual Queuing

Indicators and Interfaces

Catalyst 2948G Switch

- System status: Green (operational)/Red (faulty)
- Console (RJ-45 female)
- 10BaseT Management (RJ-45 female) data terminal equipment (DTE): Green (good)/ orange (disabled)/off (not connected)
- 48-port 10/100Mbps Fast Ethernet autosensing, autonegotiating (RJ-45 female)
 - Status: Green (operational)/Red (faulty)

- Link: Green (operational)/Red (faulty)
- 2-port 1000BaseX Gigabit Ethernet (GBIC female)
 - Status: Green (operational)/Red (faulty)
 - Link: Green (operational)/Red (faulty)

Power Supply

- PS1:
 - Good: Green (good)
 - Fail: Red (faulty)
- RPSU:
 - Good: Green (good)
 - Connected: Amber (standing-by)
 - Fail: Red (faulty)
 - SNMP MIB supported

Chassis Physical Specifications

- Dimensions (H x W x D): 2-5/8 x 17-1/2 x 15 in.
- 1.5 rack units (RU) high
- Maximum weight: 13 lb (5.9 kg)
- Mounting: 19-in. rack-compatible (rack and cable guide hardware included)

Power Requirements

- Input current:
 - 2.0A max. @ 100VAC 60Hz
 - 1.0A max @ 200VAC 50Hz
- KVA rating: 0.20 KVA
- Output power: 120 watts per power supply
- Heat dissipation: 189 watts (640 BTUs per hour)
- Power factor correction: YES

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%, noncondensing
- Operating altitude: -60 to 4000m

Safety Conditions

- Fiber optic lasers: class 1 laser products

Safety Certifications

- UL 1950
- EN 60950
- CSA-C22.2 no 950
- IEC 950

Electromagnetic Emissions Certifications

- FCC 15J Class A
- VCCI Class B
- CE Marking
- EN 55022 Class B
- CISPR 22 Class B



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