CISCO SYSTEMS

Cisco Catalyst 2980G-A
Enterprise Desktop Switch

**Introducing an enterprise breakthrough in fixed-configuration port density.
The Cisco Catalyst® 2980G-A offers fixed, high- performance, very high-density
10/100/1000 Mbps Ethernet for dedicated desktop switching in a small package.**

The cost-effective Catalyst 2980G-A is the industry's highest density, small form factor, fixed-configuration Ethernet switch in an extremely compact package—only two rack units (3.5-inch, 8.8cm) high—delivering maximum ease of management and configuration. The switch packs 80 wire-speed, 10/100 Fast Ethernet ports with two, wire-speed, Gigabit Ethernet uplinks (flexible Gigabit Interface Converter [GBIC] slots). The Catalyst 2980G-A delivers all the Ethernet switching needed for many small- to medium-sized enterprise wiring closets in a single system without the need for additional modules, cables or other interconnects. Utilizing the same industry-leading software and functionality of the Catalyst 2948G, 4000, 5000 and 6000 families, the Catalyst 2980G-A has consistent end-to-end services, which ensure complete interoperability with enterprise Catalyst switches.

The Catalyst 2980G-A is a dedicated Ethernet switch featuring high-performance, Layer 2 switching for the wiring closet with low cost-per-port and advanced yet stable software capable of supporting a wide variety of switching features. The Catalyst 2980G-A is ideal in the wiring closet for desktop clients, yet retains the entry-price advantage of fixed-configuration solutions. This new Catalyst switch provides an efficient, simple, and cost-effective method for improving performance and eliminating network congestion with wire-speed, non-blocking, Layer 2, intelligent enterprise switching.

The Catalyst 2980G-A features:

- Dedicated 80-port, 10/100 Mbps Ethernet and two-port, 1000BaseX Gigabit Ethernet with flexible media interfaces
- Feature-rich enterprise Catalyst system software with advanced Cisco IOS® network services
- Comprehensive management tools based on standard CiscoWorks2000 applications
- 24 Gbps non-blocking switch fabric
- 18 million packets-per-second forwarding rate
- EtherChannel®, UplinkFast, PortFast and other fault-tolerant features
- Redundant Power System (RPS) Support

Figure 1

Catalyst 2980G-A:
Performance, Density,
and Software
Consistency

Desktop Connection Protection: Catalyst 2980G-A

Dedicated 80-Port 10/100 for the Wiring Closet

The Catalyst 2980G-A is a fixed-configuration, Layer 2 Ethernet switch with 80 RJ-45 10/100 ports and two-Gigabit Ethernet uplink ports with modular GBIC interfaces. The full functionality and connectivity in a compact package eliminates the need for extra modules, cabling, or configuration in many small- to medium-sized enterprise wiring closets.

Industry-leading Catalyst System Software

The Catalyst 2980G-A supports the full set of features found in enterprise Catalyst system software. Not only does this ensure interoperability with other Catalyst switches (such as the Catalyst 4000 and 5000/5500 and 6000 series), but it also provides the Catalyst 2980G-A with the most comprehensive set of Layer 2 features available in the industry. Major software feature categories supported by the Catalyst 2980G-A include:

- Advanced scalability (such as Fast EtherChannel®, 802.3ad, Dynamic Virtual LANs [VLANs], and 802.1Q Trunking)
- Bandwidth management (such as quality of service, protocol filtering, and link load balancing)
- Network resiliency (UplinkFast, PortFast, and Spanning-Tree Protocol, 802.1w, 802.1s)
- Security (such as per port security, authentication, 802.1x, Private VLANs, and Internet Protocol [IP] permit lists)
- Web-based and CiscoWorks2000 management

Flexible, Full-Duplex Gigabit Uplinks

Each Catalyst 2980G-A comes standard with dual GBIC slots that can be configured with a variety of interfaces depending upon the customer's network requirements. Utilizing advanced GBIC technology, customers can choose either shortwave (1000BASE-SX), long-wave (1000BASE-LX/LH), or extended-reach (1000Base-ZX) Gigabit interfaces depending on network configuration requirements. And if in the future the customer's Gigabit interface requirement changes, the GBICs can easily (and inexpensively) be changed. (Note that GBICs are sold separately from the Catalyst 2980G-A.)

High–Performance, Non-Blocking Architecture

The Catalyst 2980G-A supports a high-performance architecture with 24 Gbps total capacity. The switch fabric is capable of supporting all 80 ports simultaneously at wire speed. The high-performance fabric on the Catalyst 2980G-A will minimize traffic congestion from growth and improve the overall network response time.

Built-In Fault Tolerance

The Catalyst 2980G-A supports a variety of fault-tolerant features including support of multiple load-sharing trunks (Fast EtherChannel), multiple Spanning-Trees, and fast-convergence software tools such as PortFast and UplinkFast. This wide range of fault-tolerant tools, both hardware and software, enable the Catalyst 2980G-A to provide the platform resiliency and fault tolerance required in today's mission-critical networks.

Redundant Power System Support

The Catalyst 2980G-A is supported by an optional external Redundant Power System (RPS) 675. The Cisco RPS 300 (1RU) supports power supply redundancy for up to six connected devices until one of those devices requires backup power. The RPS 675 also supports the Catalyst 3550 and 2950 Series of switches and additional switches and routers. For additional details, reference the Cisco Redundant Power System 675 data sheet at:
http://www.cisco.com/en/US/products/hw/accessor/ps2883/products_data_sheet09186a0080150e31.html

Comprehensive Network Management of CiscoWorks2000

The Catalyst 2980G-A is managed by the powerful CiscoWorks2000 network-management products (option). These management products are focused on such day-to-day network operations' functions as:

- Checking on device availability and configuration changes
- Provisioning of VLANs across multiple devices concurrently
- Representing 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 walk up to any browser console, identify who they are via the access control interface, and immediately begin checking on the up-time of each device—the active software versions that are running the Catalyst 2980G-A, and print a year 2000 compliant report. For drill–down, real-time device-status information, the network operations staff members can launch the Cisco 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, networkwide information, network managers can launch the CiscoWorks for Switched Internetworks (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, and integrity reports on the configurations between each switch. 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-based traffic analysis application, the networkwide user-location application, and the Virtual LAN (VLAN) application that displays the logical configuration and Spanning-Tree forwarding path information.

In summary, the Catalyst 2980G-A is a cost-effective, high-performance, high-density, feature-rich, Ethernet switch ideally suited for customers requiring Layer 2 switching in increments of 80 10/100 Mbps Fast Ethernet desktop connections with the safety of modular Gigabit Ethernet uplinks. Bandwidth, price/performance value, and enterprise software protection are all available in a complete switch solution for the wiring closet.

Technical Specifications for the Catalyst 2980G-A Switch

Standard Network Protocols

- Ethernet: IEEE 802.3, 10BaseT

- Fast Ethernet: IEEE 802.3u, 100BaseTX

- Gigabit Ethernet: IEEE 802.3z, IEEE 802.3x

- 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 Link Aggregation Control Protocol (LACP)

- IEEE 802.1p class-of-service (CoS) prioritization

- IEEE 802.1Q VLAN

- IEEE 802.1x user authentication

- 1000BaseX (GBIC)

    - 1000BaseSX

    - 1000BaseLX/LH

    - 1000BaseZX

Table 1 Gigabit Ethernet Link Distances

Fiber Core:	62.5 um MM	62.5 um MM	50 um MM	50 um MM	9/10 um SM
Fiber Modal Bandwidth	160/500 MHz-km	200/500 MHz-km	400/400 MHz-km	500/500 MHz-km	N/A
1000BaseSX	220m	275m	500m	550m	N/A
1000BaseLX/LH[1]	550m	50m	550m	550m	10km
1000BaseZX	N/A	N/A	N/A	N/A	80-100 km

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

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 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)
- Remote Monitoring (RMON) (RFC 1757)
- Remote Monitoring (RMON II) (RFC 2021)
- Interface table (RFC 1573)
- Bridge MIB (RFC 1493)
- SMT 7.3 (RFC 1285)
- Switched Port Analyzer (SPAN)
- Enhanced Switched Port Analyzer (ESPAN)
- Port snooping and connection steering (CGMP)
- 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

Memory Specifications
- Buffering:8 MB (Shared)
- NVRAM:512 KB
- FLASH:16 MB
- SDRAM:64 MB

Switching Specifications

- MAC Addresses: 16,00
- Virtual LANs (VLANs): 1,024
- Fabric: Store-and-Forward
- Queues: Dual Queuing
- Indicators & Interfaces

Catalyst 2980G-A Switch

- System status: Green (operational)/Red (faulty)
- Console (RJ-45 female)
- Reset (switch recessed protected)
- 10/100BASE-T Management (RJ-45 female) data terminal equipment (DTE): Green (good)/ orange (disabled)/ off (not connected)
- 80-port 10/100 Mbps Fast Ethernet Autosensing, Autonegotiating (RJ-45 Female)
    - Link: Green (operational)/Red (faulty)
- Two-port 1000BaseX Gigabit Ethernet (GBIC Female)
    - Link: Green (operational)/Red (faulty)

Power Supply

- PWR:
    - GOOD: Green (good)
    - FAIL: Red (faulty)
- SNMP MIB supported

Chassis Physical Specifications

- Dimensions (H x W x D):
    - 3.5 x 17.5 x 17 in. (8.89 x 44.45 x 43.18 cm.)
- Two Rack Units (RU) high
- Maximum Weight: 16 lb. (7.3 kg)
- Mounting: 19-in. rack-compatible (rack and cable guide hardware included)

Power Requirements for 2980G-A:

- Input Current:
    - 2.3A max. @ 90VAC 50-60Hz
    - 1.7A max @ 120VAC 50-60Hz
    - 1.2A max @ 180VAC 50-60Hz
    - 0.9A max @ 240VAC 50-60Hz
- KVA Rating: 0.208 KVA
- Output Power: 156 watts
- Heat Dissipation: 208 watts (670 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 percent, non-condensing

- Operating altitude: -60 to 4000m

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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