

Cisco Catalyst 2960 Series Switches with LAN Lite Software

Scalable Network Management and Enhanced Security for Growing Medium-Sized Businesses

Cisco offers a family of reliable, high-performance managed switches designed specifically for your medium-sized business. The Cisco® Catalyst® 2960 Series Switches with LAN Lite software provide the security and performance that your business applications demand and are scalable to support your continually evolving network environment. By providing these capabilities in your network foundation, you can improve the availability of your critical applications, protect your business information, more easily accommodate expanding services, and optimize your network bandwidth to more effectively deliver information and applications.

The Cisco Catalyst 2960 Series with LAN Lite software is a family of fixed-configuration, standalone switches that provide Fast Ethernet connectivity and support essential security, quality of service (QoS), and high availability for growing medium-sized companies. These switches deliver the reliability and performance you need to provide a fully scalable managed network environment for your business.

The Cisco Catalyst 2960 Series with LAN Lite software provides:

- Fast Ethernet connectivity to deliver superior application performance
- Robust security capabilities, including identity services to protect your critical assets and help you comply with regulatory requirements
- QoS intelligence to prioritize traffic from different applications and optimize bandwidth in your network
- Redundancy and resiliency features to protect the availability of your critical applications at all times
- Simple, scalable management
- Scalability to continually accommodate new applications and services as your business evolves
- Long-term investment protection with a limited lifetime hardware warranty and ongoing software updates at no additional cost

Figure 1 shows the Cisco Catalyst 2960 Series switches.

Figure 1. Cisco Catalyst 2960 Series Switches with LAN Lite

Configurations

Table 1 highlights the various configurations available in the Cisco Catalyst 2960 Series Switches with LAN Lite software.

Table 1. Configurations Available for Cisco Catalyst 2960 Series Switches with LAN Lite Software

Product Name	Description
Cisco Catalyst 2960-8TC-S	8 Ethernet 10/100 ports and 1 dual-purpose uplink port (10/100/1000BASE-T or Small Form-Factor Pluggable [SFP]*)
Cisco Catalyst 2960-24-S	24 Ethernet 10/100 ports
Cisco Catalyst 2960-24TC-S	24 Ethernet 10/100 ports and 2 dual-purpose uplink ports
Cisco Catalyst 2960-48TT-S	48 Ethernet 10/100 ports and 2 fixed 10/100/1000 uplink ports
Cisco Catalyst 2960-48TC-S	48 Ethernet 10/100 ports and 2 dual-purpose uplink ports

* The SFP-based Gigabit Ethernet ports accommodate Cisco 1000BASE-SX, 1000BASE-LX, and 1000BASE-FX SFP transceivers.

Features and Benefits

Cisco Catalyst 2960 Series Switches with LAN Lite software provide:

- **High performance:** Today's workers and business applications place higher demands on networks than ever before. The Cisco Catalyst 2960 Series supports 100 Mbps to the desktop and Gigabit Ethernet uplink connectivity, providing the bandwidth you need to meet rigorous application demands, alleviate bottlenecks, and boost application performance—enhancing the productivity of your employees while increasing the return on your existing infrastructure and application investments.
- **Enhanced security:** Modern businesses face both more serious security threats and more demanding regulatory compliance requirements than ever before. The Cisco Catalyst 2960 Series with LAN Lite software provides a wide range of security features to protect your important business information, keep unauthorized users off the network, and protect against security breaches. Key features include:
 - Cisco Identity-Based Networking Services (IBNS), which employ the 802.1x standard and the Cisco Secure Access Control Server (ACS) to provide advanced authentication and security policy administration, helping prevent unauthorized users from accessing the network
 - MAC address notification features to allow administrators to monitor the network and track where and when users enter the network
 - Port-level security features to limit access to identified MAC addresses

- Secure encryption of administrative and network management traffic to protect against eavesdropping and tampering, and comply with regulatory requirements such as the Payment Card Industry (PCI) standard
- **Improved availability and scalability:** The Cisco Catalyst 2960 Series with LAN Lite software provides the reliability you need to help ensure that your employees stay connected and productive at all times. The Cisco switches are also scalable, allowing your network to more easily accommodate new technology deployments and continually deliver optimal performance as your business and applications evolve. Important high-availability and scalability features include Spanning Tree Protocol enhancements that support increased redundancy and improved convergence times in the event of a link outage, as well as the ability to efficiently optimize the extra capacity inherent in a redundant design.
- **QoS intelligence:** The Cisco Catalyst 2960 Series with LAN Lite software supports QoS features that give you the flexibility to classify and prioritize the traffic on your network. For example, you can give traffic from mission-critical applications such as enterprise resource planning (ERP) and point-of-sale (POS) systems a higher priority than less delay-sensitive traffic such as large file downloads and videos, reducing network congestion and ensuring baseline performance for the most essential applications. The Cisco switches dynamically identify and classify groups of traffic, allowing you to assign up to four different priority levels. Once configured, these intelligent QoS capabilities perform scheduling and congestion control functions to preserve bandwidth and improve the performance of critical applications.
- **Superior manageability:** The Cisco Catalyst 2960 Series with LAN Lite software provides several intuitive, scalable management features to help you easily deploy and operate your network. The Express Setup feature allows you to set up the switch with a web-based browser eliminating need for CLI. The Cisco Network Assistant, with its PC-based graphical interface, wizards, and Cisco SmartPort tools, lets you quickly configure all of the Cisco switches, routers, and wireless access points in your network. The Cisco Network Assistant also includes the Cisco Troubleshooting Advisor, which identifies cabling problems, common configuration errors, and other potential problems in the network and recommends corrective action. For more extensive management, the Cisco Catalyst 2960 Series also supports command-line configuration and integration with Simple Network Management Protocol (SNMP)-based network management platforms, such as the CiscoWorks LAN Management Solution (LMS).

Product Specifications

Table 2 lists the hardware specifications for the Cisco Catalyst 2960 Series Switches with LAN Lite Software. Table 3 lists the power specifications for the switches, Table 4 provides the management and standards support, and Table 5 gives information on the switches' safety certifications and compliance.

Table 2. Hardware Specifications for the Cisco Catalyst 2960 Series Switches with LAN Lite Software

Description	Specification
Performance	16 Gbps switching fabric (Cisco Catalyst 2960-8TC-S, Catalyst 2960-24-S, Catalyst 2960-24TC-S, Catalyst 2960-48TT-S, and Catalyst 2960-48TC-S) - Forwarding rate based on 64-byte packets: - Cisco Catalyst 2960-8TC-S: 2.7 Mpps - Cisco Catalyst 2960-24-S: 3.6 Mpps - Cisco Catalyst 2960-24TC-S: 6.5 Mpps - Cisco Catalyst 2960-48TT-S: 10.1 Mpps - Cisco Catalyst 2960-48TC-S: 10.1 Mpps 64 MB DRAM 32 MB flash memory - Configurable up to 8000 MAC addresses - Configurable up to 255 Internet Group Management Protocol (IGMP) groups - Configurable maximum transmission unit (MTU) of up to 9000 bytes, with a maximum Ethernet frame size of 9018 bytes (jumbo frames) for bridging on Gigabit Ethernet ports, and up to 1998 bytes for bridging of Multiprotocol Label Switching (MPLS) tagged frames on both 10/100 and 10/100/1000 ports
Connectors and cabling	10BASE-T ports: RJ-45 connectors, 2-pair Category 3, 4, or 5 unshielded twisted-pair (UTP) cabling 100BASE-TX ports: RJ-45 connectors, 2-pair Category 5 UTP cabling 1000BASE-T ports: RJ-45 connectors, 4-pair Category 5 UTP cabling 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Category 5 UTP cabling 1000BASE-SX, -LX/LH SFP-based ports: LC fiber connectors (single and multimode fiber) 100BASE-FX: LC fiber connectors (single and multimode fiber).
Power connectors	- Customers can provide power to a switch only by using the internal power supply. The connector is located at the back of the switch. These switches do not have a redundant power supply port. - The internal power supply is an autoranging unit. - The internal power supply supports input voltages between 100 and 240VAC. - Use the supplied AC power cord to connect the AC power connector to an AC power outlet.
Indicators	- Per-port status: Link integrity, disabled, activity, speed, and full duplex - System status: System, link status, link duplex, and link speed
Dimensions (H x W x D)	- Cisco Catalyst 2960-8TC-S: 1.73 x 10.6 x 6.4 in. (4.4 x 27 x 16.3 cm) - Cisco Catalyst 2960-24-S: 1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm) - Cisco Catalyst 2960-24TC-S: 1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm) - Cisco Catalyst 2960-48TT-S: 1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm) - Cisco Catalyst 2960-48TC-S: 1.73 x 17.5 x 9.3 in. (4.4 x 44.5 x 23.6 cm)
Weight	- Cisco Catalyst 2960-8TC-S: 3 lb (1.4 kg) - Cisco Catalyst 2960-24-S: 8 lb (3.6 kg) - Cisco Catalyst 2960-24TC-S: 8 lb (3.6 kg) - Cisco Catalyst 2960-48TT-S: 8 lb (3.6 kg) - Cisco Catalyst 2960-48TC-S: 8 lb (3.6 kg)
Environmental ranges	- Operating temperature: 32 to 113°F (0 to 45°C) - Storage temperature: -13 to 158°F (-25 to 70°C) - Operating relative humidity: 10% to 85% (noncondensing) - Operating altitude: Up to 10,000 ft (3049 m) - Storage altitude: Up to 15,000 ft (4573 m)
Acoustic noise	- ISO 7779: Bystander position operating to an ambient temperature of 25°C - Cisco Catalyst 2960-8TC-S: 0 dBa (No fan) - Cisco Catalyst 2960-24-S: 40 dBa - Cisco Catalyst 2960-24TC-S: 40 dBa - Cisco Catalyst 2960-48TT-S: 40 dBa - Cisco Catalyst 2960-48TC-S: 40 dBa
Mean time between failures (MTBF)	- Cisco Catalyst 2960-8TC-S: 615,549 hrs - Cisco Catalyst 2960-24-S: 429,847 hrs - Cisco Catalyst 2960-24TC-S: 403,745 hrs - Cisco Catalyst 2960-48TT-S: 339,743 hrs - Cisco Catalyst 2960-48TC-S: 336,983 hrs

Table 3. Power Specifications for the Cisco Catalyst 2960 Series Switches with LAN Lite Software

Description	Specification
Maximum power consumption	• Cisco Catalyst 2960-8TC-S: 20W, 68 BTUs per hour (L) • Cisco Catalyst 2960-24-S: 30W, 103 BTUs per hour • Cisco Catalyst 2960-24TC-S: 30W, 103 BTUs per hour • Cisco Catalyst 2960-48TT-S: 45W, 154 BTUs per hour • Cisco Catalyst 2960-48TC-S: 45W, 154 BTUs per hour
AC input voltage and current	• Cisco Catalyst 2960-8TC-S: 100–240 VAC (autoranging), 0.5–0.25A, 50–60 Hz • Cisco Catalyst 2960-24-S, Catalyst 2960-24TC-S, Catalyst 2960-48TT-S, and Catalyst 48TC-S: 100–240VAC (autoranging), 1.3–0.8A, 50–60 Hz
Power rating	• Cisco Catalyst 2960-8TC-S: 0.035 kVA • Cisco Catalyst 2960-24-S: 0.05kVA • Cisco Catalyst 2960-24TC-S: 0.05kVA • Cisco Catalyst 2960-48TT-S: 0.075 kVA • Cisco Catalyst 2960-48TC-S: 0.075kVA

Table 4. Management and Standards Support for the Cisco Catalyst 2960 Series Switches with LAN Lite Software

Description	Specification
Management	• BRIDGE-MIB • CISCO-CABLE-DIAG-MIB • CISCO-CDP-MIB • CISCO-CLUSTER-MIB • CISCO-CONFIG-COPY-MIB • CISCO-CONFIG-MAN-MIB • CISCO-ENTITY-VENDORTYPE-OID-MIB • CISCO-ENVMON-MIB • CISCO-ERR-DISABLE-MIB • CISCO-FLASH-MIB • CISCO-FTP-CLIENT-MIB • CISCO-IGMP-FILTER-MIB • CISCO-IMAGE-MIB • CISCO-IP-STAT-MIB • CISCO-LAG-MIB • CISCO-MAC-NOTIFICATION-MIB • CISCO-MEMORY-POOL-MIB • CISCO-PAGP-MIB • CISCO-PING-MIB • CISCO-PORT-QOS-MIB • CISCO-PORT-SECURITY-MIB • CISCO-PORT-STORM-CONTROL-MIB • CISCO-PRODUCTS-MIB • CISCO-PROCESS-MIB • CISCO-RTTMON-MIB • CISCO-SMI-MIB • CISCO-STP-EXTENSIONS-MIB • CISCO-SYSLOG-MIB • CISCO-TC-MIB • CISCO-TCP-MIB • CISCO-UDLD-MIB • CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB • CISCO-VLAN-MEMBERSHIP-MIB • CISCO-VTP-MIB • ENTITY-MIB • ETHERLIKE-MIB • IEEE8021-PAE-MIB • IEEE8023-LAG-MIB • IF-MIB • INET-ADDRESS-MIB • OLD-CISCO-CHASSIS-MIB • OLD-CISCO-FLASH-MIB • OLD-CISCO-INTERFACES-MIB • OLD-CISCO-IP-MIB • OLD-CISCO-SYS-MIB • OLD-CISCO-TCP-MIB • OLD-CISCO-TS-MIB • RFC1213-MIB • RMON-MIB • RMON2-MIB • SNMP-FRAMEWORK-MIB • SNMP-MPD-MIB • SNMP-NOTIFICATION-MIB • SNMP-TARGET-MIB • SNMPV2-MIB • TCP-MIB • UDP-MIB

Standards	• IEEE 802.1D Spanning Tree Protocol • IEEE 802.1p CoS Prioritization • IEEE 802.1Q VLAN • IEEE 802.1s • IEEE 802.1w • IEEE 802.1x • IEEE 802.1AB (LLDP) • IEEE 802.3ad • IEEE 802.3ah (100BASE-X single and multimode fiber only) • IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports • IEEE 802.3 10BASE-T specification • IEEE 802.3u 100BASE-TX specification • IEEE 802.3ab 1000BASE-T specification • IEEE 802.3z 1000BASE-X specification	• 100BASE-FX (SFP) • 1000BASE-SX (SFP) • 1000BASE-LX/LH (SFP) • RMON I and II standards • SNMPv1, SNMPv2c, and SNMPv3
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Table 5. Safety Certifications and Compliance for the Cisco Catalyst 2960 Series Switches with LAN Lite Software

Description	Specification
Safety certifications	• UL 60950-1, First Edition • CUL to CAN/CSA 22.2 No. 60950-1, First Edition • TUV/GS to EN 60950-1, First Edition • CB to IEC 60950-1 with all country deviations • AS/NZS 60950-1, First Edition • CE Marking • NOM (through partners and distributors)
Electromagnetic compatibility certifications	• FCC Part 15 Class A • EN 55022 Class A (CISPR22) • EN 55024 (CISPR24) • AS/NZS CISPR22 Class A • CE • CNS13438 Class A • MIC • GOST • China EMC Certifications
Environmental	Reduction of Hazardous Substances (ROHS) 5
Telco	Common Language Equipment Identifier (CLEI) code
Warranty	Limited lifetime hardware warranty

Ordering Information

Table 6 gives ordering information for the Cisco Catalyst 2960 Series Switches with LAN Lite software.

Table 6. Ordering Information for the Cisco Catalyst 2960 Series Switches with LAN Lite Software

Part Numbers	Description
WS-C2960-8TC-L	• 8 Ethernet 10/100 ports and 1 dual-purpose uplink (dual-purpose uplink port has one 10/100/1000 Ethernet port and 1 SFP-based Gigabit Ethernet port, 1 port active) • Compact size with no fan; magnet included • LAN Lite Image installed
WS-C2960-24-S	• 24 Ethernet 10/100 ports • 1 RU fixed-configuration • LAN Lite image installed
WS-C2960-24TC-S	• 24 Ethernet 10/100 ports and 2 dual-purpose uplinks (each dual-purpose uplink port has one 10/100/1000 Ethernet port and 1 SFP-based Gigabit Ethernet port, 1 port active) • 1 RU fixed-configuration • LAN Lite image installed

WS-C2960-48TT-L	• 48 Ethernet 10/100 ports and two 10/100/1000TX uplinks • 1 RU fixed-configuration • LAN Lite Image installed
WS-C2960-48TC-S	• 48 Ethernet 10/100 ports and 2 dual-purpose uplinks (each dual-purpose uplink port has one 10/100/1000 Ethernet port and 1 SFP-based Gigabit Ethernet port, 1 port active) • 1 RU fixed-configuration • LAN Lite image installed
RCKMNT-1RU=	Spare rack-mount kit for the Cisco Catalyst 2960 Series
RCKMNT-REC-1RU=	1 RU recessed rack-mount kit for the Cisco Catalyst 2960 Series
GLC-LH-SM=	1000BASE-LX/LH SFP transceiver module for MMF and SMF, 1300-nm wavelength
GLC-SX-MM=	1000BASE-SX SFP transceiver module for MMF, 850-nm wavelength
GLC-T=	1000BASE-T SFP transceiver module for Category 5 copper wire
GLC-GE-100FX=	100BASE-FX SFP module for Gigabit Ethernet ports, 1310-nm wavelength, 2 km over MMF
GLC-FE-100FX=	100BASE-FX SFP module for 100-Mb ports, 1310-nm wavelength, 2 km over MMF
CAB-SM-LCSC-1M	1m fiber single-mode LC-to-SC connectors
CAB-SM-LCSC-5M	5m fiber single-mode LC-to-SC connectors

Service and Support

Table 7 lists the features of the Cisco services and support programs.

Table 7. Cisco Services and Support Programs

Service	Cisco Smart Care Service	Cisco SMARTnet Service	Cisco Smart Foundation Service
Type of Service	Proactive networkwide monitoring, assessments, and notifications	Responsive device coverage	Responsive device coverage
Advanced Hardware Replacement	• 8 x 5 x next business day (NBD) • 8 x 5 x 4	• 8 x 5 x NBD • 8 x 5 x 4 • 24 x 7 x 4 and/or 24 x 7 x 2 (onsite parts replacement and installation)	• 8 x 5 x NBD
Onsite Engineer		Only with onsite option	
Cisco Technical Assistance Center (TAC) Hotline	24 x 7 access	24 x 7 access	Business hours (8 a.m.–5 p.m.) access to special SMB TAC (access levels vary by region)
Cisco.com Knowledge Base and Tools	Smart Care portal	Full access	Cisco.com SMB knowledge base
Operating System and Application Software	Ongoing updates	Ongoing updates and upgrades	Operating system software updates
Eligible Devices	SMB-class products	All	Select SMB-class data products
Delivered By	Delivered by Cisco certified partner and Cisco collaboratively	Cisco	Cisco

To help you realize the most value from your Cisco network investments, Cisco provides award-winning technical support services. With a Cisco technical services contract, you can gain access to Cisco technical experts, as well as industry-leading Cisco tools and resources to help you increase your operational efficiency, control costs, and maintain optimal network performance and reliability.

To support your Cisco Catalyst 2960 Series switches, you can choose from the following options:

- **Cisco SMARTnet Service:** Cisco SMARTnet Service is an award-winning technical support service that provides direct, anytime access to Cisco engineers, as well as extensive technical resources. The service provides rapid issue resolution, flexible device-by-device coverage, and premium service options to help you improve your operational efficiency and get the most from your Cisco investment.
- **Cisco Smart Care Service:** The Cisco Smart Care Service combines technical support and maintenance for your entire Cisco network with ongoing network monitoring and proactive network assessments. These monitoring and assessment capabilities increase your ability to view the current health and security of your network, protect the availability of your critical applications, and reduce the time and effort required to ensure that your network is running optimally. Delivered by your local Cisco Certified Partner, the service combines the complementary strengths of Cisco and its partners to provide you with a superior service experience.
- **Cisco Smart Foundation Service:** Designed specifically for small and medium-sized businesses, the Cisco Smart Foundation Service provides easy, cost-effective network support to improve operational reliability, contain costs, and protect investments in Cisco networking solutions. The technical service offering provides access to Cisco technical engineers who are specially trained to assist small businesses that do not have a dedicated networking staff. The service also includes advance hardware replacement, operating system software maintenance, and access to the Cisco Smart Foundation Service client and web portal.

For more information on Cisco Services, visit:

http://www.cisco.com/en/US/products/ps6888/serv_category_home.html.

A Scalable Foundation for Your Business Network

As your employees, your customers, and your overall business profitability increasingly depend on your network applications, you need a high-performance network foundation that can meet continually evolving demands. The Cisco Catalyst 2960 Series Switches with LAN Lite software provide the security, availability, and scalable manageability to support your growing business, both today and in the future.

For More Information

For more information about the Cisco Catalyst Express 2960 Series Switches with LAN Lite software, visit: <http://www.cisco.com/go/catalyst2960>.



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