Q & A

Cisco Catalyst 2950 Series Switches with Standard Image and Enhanced Image Software

Product Overview

Q. What devices comprise the Cisco Catalyst® 2950 Series switches?

A. **Catalyst 2950G-12, 2950G-24, 2950G-48, 2950G-24-DC**—These Cisco Catalyst 2950 Series switches are stackable switches that offer wire-speed connectivity to the desktop and Gigabit uplink connectivity using a variety of optional Gigabit Interface Converter (GBIC) uplinks. These products, as well as the Catalyst 2950T-24 and 2950C-24 switches, deliver intelligent services, such as availability, security, and quality of service (QoS), to the network edge—using the simple Cisco Cluster Management Suite (CMS) Software Web-based interface. The Catalyst 2950G switches, along with the Catalyst 2950T-24 and 2950C-24 switches, come with the Enhanced Image (EI) Software installed to provide intelligent services.

Catalyst 2950C-24, 2950T-24—Existing members of the Cisco Catalyst 2950 Series of high-performance, standalone, 10/100 auto-sensing Fast Ethernet and Gigabit Ethernet switches. Both products bring intelligent services to the edge of the network to accommodate the needs of growing workgroups and server connectivity. The Catalyst 2950C-24 provides 24 10/100 ports plus 2 fixed 100BASE-FX ports. The Catalyst 2950T-24 switch offers mid-sized enterprises an easy migration path to Gigabit by using existing copper cabling infrastructure with 24 10/100 ports plus 2 fixed 10/100/1000BASE-T uplinks. Embedded in the Catalyst 2950 Series is the Cisco CMS Software, which allows users to simultaneously configure and troubleshoot multiple Catalyst desktop switches using a standard Web browser.

Catalyst 2950SX-24, 2950-24, 2950-12—Fixed-configuration, managed 10/100 switches providing basic workgroup connectivity for small to mid-sized companies. These wire-speed desktop switches offer Cisco IOS® Software functionality for basic data, video, and voice services at the edge of the network. The Catalyst 2950SX-24, 2950-12, and 2950-24 switches are only available with the Standard Image (SI) software for the Catalyst 2950 Series. The Catalyst 2950SX-24 provides 24 10/100 ports plus 2 fixed 1000BASE-SX ports. This switch is ideal for networks in education and government organizations, where fiber uplinks are a requirement. Embedded in the Catalyst 2950 Series is the Cisco CMS Software, which allows users to simultaneously configure and troubleshoot multiple Catalyst desktop switches using a standard Web browser.

Other Catalyst 2950 Series switches:

Catalyst 2950ST-24-LRE, 2950ST-8-LRE—These Cisco Catalyst 2950 Series switches are stackable Long-Reach Ethernet (LRE) switches that offer speeds of 5–15 Mbps at distances of up to 5000 feet *over existing phone wiring (Category 1,2,3)*, and uplink connectivity

using a variety of fixed and optional Small Form Factor Pluggables (SFP) uplinks. These switches deliver intelligent services, such as availability, security and QoS, to the network edge—using the simple Cisco CMS Software Web-based interface. The EI Software is installed to provide intelligent services.

See Table 1 for product specifications.

Table 1 Cisco Catalyst 2950 Series Switches

Product Name	Product Number	Product Description
EI Software		
Catalyst 2950G-12	WS-C2950G-12-EI	• 12 10/100 ports and 2 fixed GBIC-based 1000BASE-X uplink ports • 1 rack unit (RU) stackable switch • Delivers intelligent services to the network edge • EI Software installed
Catalyst 2950G-24	WS-C2950G-24-EI	• 24 10/100 ports and 2 fixed GBIC-based 1000BASE-X uplink ports • 1 RU stackable switch • Delivers intelligent services to the network edge • EI Software installed
Catalyst 2950G-48	WS-C2950G-48-EI	• 48 10/100 ports and 2 fixed GBIC-based 1000BASE-X uplink ports • 1 RU stackable switch • Delivers intelligent services to the network edge • EI Software installed
Catalyst 2950G-24-DC	WS-C2950G-24-EI-DC	• 24 10/100 ports and 2 fixed GBIC-based 1000BASE-X uplink ports • 1 RU stackable, DC-powered switch • Delivers intelligent services to the network edge • EI Software installed
Catalyst 2950T-24	WS-C2950T-24	• 24 10/100 ports and 2 fixed 10/100/1000BASE-T uplink ports • 1 RU switch • Delivers intelligent services to the network edge • Upgradable to EI Software
Catalyst 2950C-24	WS-C2950C-24	• 24 10/100 ports and fixed 100BASE-FX uplink ports • 1 RU switch • Delivers intelligent services to the network edge • Upgradable to EI Software
SI Software		
Catalyst 2950SX-24	WS-C2950SX-24	• 24 10/100 ports and 2 fixed 1000BASE-SX uplink ports • 1 RU switch • SI Software installed
Catalyst 2950-24	WS-C2950-24	• 24 10/100 ports • 1 RU switch • SI Software installed

Table 1 Cisco Catalyst 2950 Series Switches

Product Name	Product Number	Product Description
Catalyst 2950-12	WS-C2950-12	• 12 10/100 ports • 1 RU switch • SI Software installed
Other Catalyst 2950 Series Switches		
Catalyst 2950-24 LRE	WS-C2950ST-8-LRE	• 24 LRE Ports • 2 10/100/1000 RJ-45 fixed uplinks • 2 Small Form Factor Pluggables (SFP) uplinks • 1 rack unit (RU) stackable switch • Delivers intelligent services over existing phone wiring • EI Software installed
Catalyst 2950-8-LRE	WS-C2950ST-8-LRE	• 8 LRE Ports • 2 10/100/1000 RJ-45 Fixed Uplinks • 2 Small Form Factor Pluggables (SFP) uplinks • 1 RU stackable switch • Delivers intelligent services over existing phone wiring • EI Software installed

Q. What is the Enhanced Image (EI) Software?

A. The Cisco Catalyst 2950T-24, 2950C-24, 2950G switches are installed with the EI Software, which delivers intelligent services, such as advanced QoS, rate-limiting, security filters, and multicast management, to the network edge.

Q. What is the difference between the Cisco Catalyst 2950 Standard Image (SI) and Enhanced Image (EI) versions?

A. The Cisco Catalyst 2950 Series includes two software image versions that support different degrees of functionality—the SI and the EI. The version of software depends solely on the model of switch selected, with no upgrade capabilities.

The SI version is embedded in Cisco Catalyst 2950-12, 2950-24, 2950SX-24 switches, and supports basic Cisco IOS® functionality, Fast Ethernet connectivity, and cluster management.

The EI version supports all that and more. The EI version of software is embedded in Cisco Catalyst 2950T-24, 2950C-24, and 2950G-12, 2950G-24, 2950G-48 switches, and supports advanced intelligent services, gigabit connectivity, and a richer set of features. These include Cisco Spanning-Tree Protocol enhancements for high availability, access control parameters (ACPs) for enhanced security, and Differentiated Services Code Point (DCSP) and rate limiting for advanced QoS.

Q. Why do I need intelligence at the edge of my network?

A. Networks of today are evolving to address four new developments at the network edge:

- Increase in desktop computing power
- Introduction of bandwidth-intensive applications
- Expansion of highly sensitive data on the network
- Presence of multiple device types, such as IP phones and wireless LAN access points

These new demands are contending for resources with many existing mission-critical applications. As a result, IT professionals must view the edge of the network as critical to effectively manage the delivery of information and applications.

As companies increasingly rely on networks as the strategic business infrastructure, it is more important than ever to ensure their high availability, security, scalability, and control. By adding Cisco intelligent functionality to the wiring closet, customers can now deploy network-wide intelligent services that address these requirements in a consistent way from the desktop to the core and through the WAN.

With Cisco Catalyst switches, Cisco enables companies to realize the full benefits of adding intelligent services into their networks. Deploying capabilities that make the network infrastructure highly available to accommodate time-critical needs, scalable to accommodate growth, secure enough to protect confidential information, and capable of differentiating and controlling traffic flows are key to further optimizing network operations.

Q. Can you provide more details on how an intelligent switch from Cisco will help my network?

A. New applications are requiring higher bandwidth and the need to differentiate and control the traffic flow. Applications such as ERP (Oracle, SAP, etc.), voice (IP telephony traffic) and CAD/CAM require prioritization over less time-sensitive applications such as FTP or e-mail (SMTP). It would be highly undesirable to have a large file download destined to one port on a wiring closet switch and have quality implications such as increased latency in voice traffic, destined to another port on this switch. This condition is avoided by ensuring that voice traffic is properly classified and prioritized throughout the network. Cisco switches implement superior QoS to ensure that network traffic is classified, prioritized, and congestion is avoided. Configuration of QoS is greatly simplified through automatic QoS (auto-QoS), a feature that detects Cisco IP phones and automatically configures the switch for the appropriate classification and egress queuing. This optimizes traffic prioritization and network availability without the challenge of a complex configuration.

Q. Can Catalyst 2950 Series switches be upgraded to enable IP routing?

A. No. None of the Catalyst 2950 Series switches can be upgraded to enable IP routing. Cisco Catalyst 3550 Series switches have the capability to enable IP routing.

Q. Do Catalyst 2950 Series switches support Gigabit Ethernet connectivity? Do they support GBIC-based uplinks?

A. Catalyst 2950 Series switches support Gigabit Ethernet connectivity via either fixed 10/100/1000 ports or GBIC ports. The following GBICs are supported: 1000BASE-SX, 1000BASE-LX, 1000BASE-ZX, 1000BASE-T, CWDM, and the GigaStack® Stacking GBIC.

The Catalyst 2950T-24 provides 24 10/100 ports with 2 fixed 10/100/1000BASE-T uplink ports. The 10/100/1000BASE-T ports on the Catalyst 2950T-24 Switch can be connected to other switches that support 1000BASE-T GBICs or used as uplinks to copper gigabit-enabled servers.

The Catalyst 2950SX-24 provides 10/100 ports with two fixed 10/100/1000BASE-SX uplink ports. The 10/100/1000BASE-SX ports on the Catalyst 2950SX-24 Switch can be connected to other switches that support 1000BASE-SX GBICs or used as uplinks to fiber connection.

The Catalyst 2950G-12, 2950G-24, 2950G-48, and 2950G-24-DC each have 10/100 ports with two GBIC ports. The 1000BASE-SX, 1000BASE-LX, 1000BASE-ZX, 1000BASE-T, and 1000BASE-CWDM GBICs can be used in the GBIC ports to provide gigabit-speed uplinks using fiber cabling.

Q. Do Catalyst 2950 LRE Series switches support Gigabit Ethernet connectivity? Do they support GBIC-based uplinks?

A. Catalyst 2950 LRE Series switches support Gigabit Ethernet connectivity via either fixed 10/100/1000 ports or SFP ports. The following SFPs are supported: 1000BASE-SX, 1000BASE-LX, 1000BASE-ZX, and 1000BASE-T.

Q. Do the Catalyst 2950G switches support the Cisco 1000BASE-T GBIC?

A. Yes, the Catalyst 2950G switches support the Cisco 1000BASE-T GBIC. Cisco recently introduced a new 1000BASE-T GBIC in Q3FY02. This new GBIC (WS-G5483=) conforms to 1000BASE-T standards and replaces the existing Cisco 1000BASE-T GBIC (WS-G5482), which announced its end-of-sale in March 2002.

Q. What are the highlights of the Cisco fixed-configuration 1000BASE-T (Gigabit Ethernet over copper) solution for mid-sized businesses and enterprise branches?

A. When combined with a Cisco Catalyst 3550 Switch with IP routing, the Catalyst 2950 Series Switches are an affordable way to complete a LAN solution that deploys intelligent services such as advanced QoS, rate limiting, security, and multicast management to the edge of a network. The combination of the Catalyst 3550-12T and Catalyst 2950T-24 is optimized for Gigabit Ethernet-over-copper aggregation and enables mid-sized business and enterprise branch customers to move from Fast Ethernet to a higher performance Gigabit Ethernet backbone using existing Category 5 copper cabling.

Q. What are the highlights of the Cisco fixed-configuration, 1000BASE-SX (Gigabit Ethernet over fiber) solution for small/mid-sized businesses and government/education organizations?

A. The Cisco Catalyst® 2950SX-24 switch is a cost-effective standalone, managed switch for basic connectivity with 24 10/100 ports and 2 1000BASE-SX fixed-configuration, wire-speed ports. Dual integrated SX fiber ports provide redundancy and increased availability, as well as provide a cost-effective means for cascading switches and managing them as a cluster. These switches are extremely easy to install and manage using Cisco CMS Software, an embedded Web-based management tool that allows users to configure and troubleshoot up to 16 Catalyst desktop switches using a single IP address.

Q. What software features are available on the Catalyst 2950 Series switches?

A. The Catalyst 2950 software feature set delivers intelligent services to the edge of the network. Key additions to the feature set include advanced QoS with an ability to map DiffServ Code Point (DSCP) to class of service (CoS) or vice versa; rate limiting based on a wide range of access control parameters (ACPs) such as source/destination IP address, source/destination Media Access Control MAC, and TCP/User-Datagram-Protocol (UDP) port number; and sophisticated security through filtering *[see next question for more details on security]*. In addition to Layer 3/4 lookups, the Catalyst 2950 Series offers new ease of use and deployment features such Dynamic Trunking Protocol (DTP), Port Aggregation Protocol (PAgP), dynamic virtual LANs (VLANs), and VLAN Trunking Protocol (VTP) pruning. For a full range of software features supported by the Catalyst 2950 Series, refer to the Catalyst 2950 Series EI Data Sheet at http://www.cisco.com/go/catalyst2950.

The Catalyst 2950SX-24, and Catalyst 2950-24, and Catalyst 2950-12 do not support the intelligent services described above. These products—aimed at the price sensitive customer—deliver a superior LAN-edge Layer 2 QoS (unmatched in its class of products in the industry), superior multicast management via Internet Group Management Protocol (IGMP) snooping in hardware, and wire-speed performance. For a full listing of software features available on Catalyst 2950SX-24, Catalyst 2950-24, and Catalyst 2950-12, refer to the Catalyst 2950 Series SI Data Sheet at http://www.cisco.com/go/catalyst2950.

All Catalyst 2950 Series switches support all traditional wiring closet features such as a Web management interface, Network Timing Protocol (NTP), port-based VLANs, Fast EtherChannel®/Gigabit EtherChannel technologies, 802.1Q VLAN tagging support, VTP, UplinkFast, Per VLAN Spanning Tree Plus (PVST+), and Terminal Access Controller Access Control System (TACACS+) and RADIUS.

Q. What are the highlights of the security features available on the Catalyst 2950 Series Switches?

A. The Cisco Catalyst 2950 Series switches offer enhanced data security through a wide range of security features. These features allow customers to secure network management traffic by encrypting passwords and configuration information; provide options for network security based on users, ports, and/or MAC addresses; and restrict access to sensitive areas of the network. The security enhancements are available free-of-charge by downloading the latest software release for the Catalyst 3550 and 2950 switches.

Private VLAN Edge, available on both the Standard and Enhanced Image, isolates ports on a switch, ensuring that users cannot snoop on other users' traffic. Local Proxy Address Resolution Protocol (ARP) works in conjunction with private VLAN edge to minimize broadcasts and maximize available bandwidth. Port-based ACPs, available only on Enhanced Image, restrict sensitive portions of the network by denying packets based on source and destination MAC addresses, IP addresses, or TCP/UDP ports. ACP lookups are done in hardware; therefore, forwarding performance is not compromised when implementing this type of security in the network.

Port security provides another means to ensure the appropriate user is on the network by limiting access based on MAC addresses. For authentication of users with a RADIUS server, 802.1x provides port-level security on both Enhanced and Standard Images. 802.1x extensions on both Standard and Enhanced images are 802.1x with port security on a per-port basis, and 802.1x with Voice VLAN. In addition, 802.1x with VLAN assignment is an extension available only on the Enhanced Image.

Secure Shell (SSH) and Simple Network Management Protocol version 3 (SNMPv3) protects information from being tampered with or eavesdropped by encrypting information being passed along the network, thereby guarding administrative information. These features are available only on the Enhanced Image.

With the EI Cisco Catalyst 2950 switches, network managers can implement high levels of console security. Multilevel access security on the switch console and the Web-based management interface prevents unauthorized users from accessing or altering switch configuration. TACACS+ and RADIUS authentication enables centralized access control of the switch and restricts unauthorized users from altering the configuration. Deploying security can be done through Cisco CMS Software Security Wizards, which ease the deployment of security features that restrict user access to a server, a portion of the network, or access to the network.

Q. Do Cisco Catalyst 2950 switches support Switch Clustering?

A. Yes, the Catalyst 2950 switches can be managed using the Web-based Cisco CMS Software, which uses Cisco Switch Clustering technology. Cisco CMS is Web-based software that is embedded in Catalyst 3550, 2950, 3500 XL, 2900 XL, 2900 LRE XL, and 1900 switches. Through Cisco Switch Clustering technology, users access Cisco CMS with any standard Web browser to manage up to 16 of these switches at once, regardless of their physical proximity—with the option of using a single IP address if desired.

Cisco CMS provides an integrated management interface for the Catalyst 2950 switches with Enhanced Image software to deliver intelligent services, such as multilayer switching, QoS, multicast, and security access control lists (ACLs). Thus, Cisco CMS allows administrators to take advantage of benefits formerly reserved for only the most advanced networks without having to learn the command-line interface (CLI) or even the details of the technology.

The new Guide Mode in Cisco CMS leads the user step-by-step through the configuration of high-end features and provides enhanced online help for context-sensitive assistance. In addition, AVVID (Architecture for Video, Voice and Integrated Data) Wizards provide automated configuration of the switch to optimally support video streaming or videoconferencing, voice over IP (VoIP), and mission-critical applications. Wizards for LAN security and multicast are also provided.

Cisco CMS supports standards-based connectivity options such as Ethernet, Fast Ethernet, Fast EtherChannel®, Gigabit Ethernet, and Gigabit EtherChannel connectivity. Because Cisco Switch Clustering technology is not limited to a single stack of switches, Cisco CMS expands the traditional cluster domain beyond a single wiring closet and saves time and effort for network administrators.

Cisco Catalyst 2950 switches can be configured either as command or member switches in a Cisco switch cluster. Cisco CMS also allows the network administrator to designate a standby or redundant command switch, which takes the commander duties should the primary command switch fail. Other key features include the ability to configure multiple ports and switches simultaneously, perform software updates across the entire cluster at once, and clone configurations to other clustered switches for rapid network deployments. Bandwidth graphs and link reports provide useful diagnostic information and the topology map gives network administrators a quick view of the network status.

Q. What kind of network management available on Cisco Catalyst 2950 switches?

A. In addition to Cisco CMS, Cisco Catalyst 2950 switches provide extensive management tools using Simple Network Management Protocol (SNMP) network management platforms such as CiscoWorks.

The Cisco Catalyst 2950 Switches delivers a comprehensive set of management tools to provide the required visibility and control in the network. Managed with CiscoWorks, Catalyst family switches can be configured and managed to deliver end-to-end device, VLAN, traffic, and policy management. Coupled with CiscoWorks, Cisco Resource Manager Essentials, a Web-based management tool, offers automated inventory collection, software deployment, easy tracking of network changes, views into device availability, and quick isolation of error conditions.

Supported CiscoWorks Applications are:

- Campus Manager
- CiscoView
- RME (Resource Manager Essentials)
- Device Fault Manager
- URT (User Registration Tool)—VMPS
- ACS (Access Control Server)—RADIUS, TACACS+
- IPM (Internet Performance Monitor)
- SAA (Service Assurance Agent)

Product Positioning

Q. What is the positioning of the Cisco Catalyst® 2950 Series switches?

A. The Catalyst® 2950 Series Switches are fixed-configuration, stackable models that provide wire-speed Fast Ethernet and Gigabit Ethernet connectivity for small and mid-sized networks. The Catalyst 2950 Series is an affordable product line that brings intelligent services, such as advanced, enhanced security, and high availability to

the network edge—while maintaining the simplicity of traditional LAN switching. When a Catalyst 2950 Switch is combined with a Catalyst 3550 Series Switch, the solution enables IP routing from the edge to the core of the network. Embedded in the Catalyst 2950 Series is the Cisco CMS Software, which allows users to simultaneously configure and troubleshoot multiple Catalyst desktop switches using a standard Web browser. Cisco CMS Software provides new configuration wizards that greatly simplify the implementation of converged applications and network-wide services.

The Cisco Catalyst® 2950SX-24, 2950-24, and 2950-12, members of the Cisco Catalyst 2950 Series Switches, are standalone, fixed-configuration, managed 10/100 switches providing basic workgroup connectivity for small to mid-sized companies. These wire-speed desktop switches come with SI software features and offer Cisco IOS® functionality for basic data, video, and voice services at the edge of the network. Embedded in the Catalyst 2950 Series is the Cisco CMS Software, which allows users to simultaneously configure and troubleshoot multiple Catalyst desktop switches using a standard Web browser.

Q. What is the positioning of the Cisco Catalyst 2950 LRE Series switches?

A. Cisco is the only company with the breadth of technologies that allow customers to extend Intelligent Services across any combination of wired and wireless infrastructures. For the first time, the Catalyst 2950 Long-Reach Ethernet (LRE) Series Switches enables customers to extend Intelligent Services over existing phone and legacy wiring to distances up to 5000 feet. The Catalyst 2950 LRE Series provides customers the ability to easily deploy and leverage all of the enhanced features and functionality of the Catalyst 2950 Series Switches while eliminating the costs of rewiring.

Product Transitions

Q. What is the positioning of the Cisco Catalyst 2950 Series with respect to Catalyst 2900 Series XL and 3500 Series XL switches?

A. Catalyst 2950 Series includes hardware configurations that support GBIC-based gigabit connectivity as well as stacking. Further, the Catalyst 2950 Series also delivers a wide range of intelligent services to the edge of a network, at prices lower than those of Cisco Catalyst 3500 XL and 2900 XL configurations.

Customers previously purchasing fixed configuration Catalyst 2900 Series XL switches now have superior alternatives with the Catalyst 2950 switches. Cisco announced the end-of-sale of the fixed-configuration Catalyst 2900 Series XL switches on October 31, 2001. See:

http://www.cisco.com/en/US/products/hw/switches/ps607/prod_bulletin09186a00800922fb.html for more information.

Customers previously purchasing Catalyst 3512-XL-EN, 3524-XL-EN, and 3548-XL-EN switches now have superior alternatives with Catalyst 3550 and 2950 switches. Cisco announced the end of sale of the Catalyst 3512 XL, 3524 XL, and 3548 XL on July 27, 2002. See:

http://www.cisco.com/en/US/products/hw/switches/ps637/index.html for more information.

Q. Are the new Cisco Catalyst 2950 switches compatible with the Catalyst 2900 XL and 3500 XL switches?

A. The Catalyst 2950 Series switches are compatible with the Catalyst 3500 XL and 2900 XL switches in every way. Committed to protecting customer investments in desktop switches, Cisco has ensured that all desktop switching platforms—Catalyst 2950, 3550, 3500 XL, 2900 XL, 2900 LRE XL and 1900—can be used together and managed using the Cisco CMS Software already embedded and supported in these switches.

Q. What are Cisco's plans with regard to the future of the modular products in the Catalyst 2900 Series XL?

A. The Cisco Catalyst 2950 Series does not have switches that replace the following modular products in the Catalyst 2900 Series XL—WS-C2924M-XL-EN and WS-C2912MF-XL-EN. Cisco expects to continue to ship these modular Catalyst 2900 XL switches. The end-of-sale for the Catalyst 2900 XL ATM Modules for these products occurred on July 27, 2002. See:

http://www.cisco.com/en/US/products/hw/switches/ps607/index.html for more information.

Q. What is the positioning of the Catalyst 2950 switches with respect to the Catalyst 1900/2820 and FastHub® 400 Series of products?

A. Catalyst 2950 switches offer the ideal solution for customers migrating from Switched Ethernet or Shared 10/100 in their LANs to Switched Fast Ethernet/Gigabit Ethernet. For customers who have Catalyst 1924-A or 1924-EN switches installed in their LANs, the Catalyst 2950T-24 Switch offers the most appropriate migration path. The Catalyst 2950T-24 offers 24 10/100 desktop ports and 2 fixed 10/100/1000BASE-T uplink ports, thereby providing an easy migration path to Fast and Gigabit Ethernet using existing Category 5 cabling. The Catalyst 2950SX-24 also offers 24 10/100 desktop ports, but with 2 fixed 10/100/1000BASE-SX uplink ports, for Gigabit connectivity where fiber is a requirement. For those customers who are looking for robust connectivity to the desktop, the Catalyst 2950-24 also offers an affordable alternative to the Catalyst 1924-A, Catalyst 1924-EN, and Catalyst 2828-A switches. The end-of-sale for the Catalyst 1900/2820 and FastHub 400 products on July 27, 2002. See:

http://www.cisco.com/en/US/products/hw/switches/ps574/index.html and http://www.cisco.com/en/US/products/hw/hubcont/ps858/index.html for more information

Q. What is the positioning of the Cisco Catalyst 2950 LRE Series with respect to Cisco Catalyst 2900 LRE XL switches?

A. The Catalyst 2950 Series includes hardware configurations that support SFP-based Gigabit Ethernet connectivity as well as stacking. Further, the Catalyst 2950 Series also delivers a wide range of intelligent services to the edge of a network, more cost-effectively than Catalyst 2900 LRE XL configurations. Customers previously purchasing fixed configuration Catalyst 2900 Series XL switches now have superior alternatives with the Catalyst 2950 switches.

Q. Are the new Cisco Catalyst 2950 LRE switches compatible with the Catalyst switches and Cisco LRE CPE?

A. The Catalyst 2950 Series switches are compatible with the entire Catalyst product line. Committed to protecting customer investments in desktop switches, Cisco has ensured that all desktop switching platforms—Catalyst 2950, 3550, 3500 XL, 2900 XL, 2900 LRE XL and 1900—can be used together and managed using the Cisco CMS Software already embedded and supported in these switches. Cisco LRE devices are fully interoperable with both the Catalyst 2900 LRE XL and 2950 LRE switches.

Cisco Catalyst 2950 Series Roadmap

Q. Does the Cisco Catalyst 2950 Series support Inter-Switch Link (ISL) trunking? Are there any plans to support ISL in the future?

A. No. The Catalyst 2950 Series does not support ISL trunking, and there are no plans to support ISL trunking on the Catalyst 2950 platform. For those customers with a requirement to deploy ISL trunking, Catalyst 3550 switches support both ISL and 802.1Q trunks. A recommended migration to the ISL trunking standard while still implementing the Catalyst 2950 is to place an ISL/dot1Q-capable device between the ISL-supported device and the Catalyst 2950 Switch.

Q. Does Cisco offer five packs or multipacks of the Cisco Catalyst 2950 switches?

A. No. Cisco does not offer global five packs or other multipacks for the Catalyst 2950 platform.

Service and Warranty

Q. What is the warranty for Cisco Catalyst 2950 Series switches?

A. Cisco Catalyst 2950 switches come with the Cisco Limited Lifetime Hardware Warranty. Ongoing software updates are available to customers on the Cisco Web site free of charge.

Limited Lifetime Warranty

The hardware warranty available on Catalyst 3550, 2950, and 3500 XL switches is the Limited Lifetime Hardware Warranty. This warranty automatically comes with the purchase of eligible Catalyst products, free of charge. Additionally, it offers free Advanced Replacement of products within ten business days. For specific details on the Limited Lifetime Hardware Warranty, visit:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/lh2ben__.htm.

Software Updates

In addition to the Limited Lifetime Hardware Warranty, Cisco offers FREE Cisco IOS® Software updates on the Catalyst 3550, 2950, 3500 XL, and 2900 XL switches. For the life of the product, updates within the release and feature set purchased will be made available to customers through the Software Center at:

http://www.cisco.com/public/sw-center/sw-switching.shtml.

Updates are applicable only for releases that Cisco makes available. This statement supersedes any previous warranty or software statement and is subject to change without notice.

Q. What service and support are available for the Cisco Catalyst 2950 Series switches?

A. A full complement of life-cycle service and support is available for the Cisco Catalyst 2950 Series. From implementation to operation and optimization, Cisco offers Technical Support Service and Advanced Service delivered either directly by Cisco or through one of its best-in-class partners.

Technical Support Service

Technical Support Service is available through *SMARTnet* and *SMARTnet Onsite*. SMARTnet augments the resources of your operations staff by providing them with access to a wealth of expertise, both on line and via telephone, and a range of hardware Advance Replacement options. SMARTnet Onsite complements the hardware

Advance Replacement feature by adding the services of a field engineer, services that can be critical for those locations where staffing is insufficient or unavailable to perform parts replacement activities. For more information on SMARTnet, visit:

http://www.cisco.com/en/US/products/svcs/ps3034/ps2827/ps2978/serv_home.html.

Advanced Service

Total Implementation Solutions (TIS) offers a full range of implementation solutions including project management, project engineering, configuration, staging, and rollout coordination, and ensuring correct installation and deployment. Configuration services now include development and verification of configuration for intelligent services such as QoS and multicast. For more information on Total Implementation Solutions, visit:

http://www.cisco.com/en/US/products/svcs/ps11/ps2902/ps3061/serv_home.html. For more information on configuration services for QoS and multicast, contact: gps-pds-west@cisco.com.

Product and Contact Information

Q. Where can I find technical/product specifications and other additional information on the Catalyst 2950 switches?

A. For a variety of product literature such as data sheets, product specifications, refer to the Catalyst 2950 Web site at http://www.cisco.com/go/catalyst2950.

Cisco Catalyst 2950 Technical FAQ

Q. If I want to use the Cisco Redundant Power System (RPS) 300 to provide redundant power to my Catalyst 2950 switches, how would I implement this redundant power solution?

A. The Cisco RPS 300 supports the Catalyst 2950 by providing DC power to one failed unit at a time. You can connect up to six Catalyst 3550, 2950, and 3524-PWR XL switches to the Cisco RPS 300. If one switch fails, the Cisco RPS 300 would provide redundant power to that switch until you are able to replace the unit.

Q. How can I connect the 100BASE-FX ports of the Catalyst 2950C-24 to the 100BASE-FX ports device that has an SC or ST connector?

A. Fiber patch cables are available from Cisco in 1-, 3-, or 5-meter lengths for connecting the MT-RJ connector on your Catalyst 2950C-24 to another 100BASE-FX device with an SC or ST connector. Table 2 lists the part numbers.

Table 2 Cisco Fiber Patch Cables

Description	Part Number	List Price	Availability
1-meter MT-RJ to SC Patch Cable	CAB-MTRJ-SC-MM-1M	$50	Now
3-meter MT-RJ to SC Patch Cable	CAB-MTRG-SC-MM-3M	$60	Now
5-meter MT-RJ to SC Patch Cable	CAB-MTRJ-SC-MM	$70	Now
1-meter MT-RJ to ST Patch Cable	CAB-MTRJ-ST-MM	$50	Now
3-meter MT-RJ to ST Patch Cable	CAB-MTRJ-ST-MM	$60	Now
5-meter MT-RJ to ST Patch Cable	CAB-MTRJ-ST-MM	$70	Now

Q. What network interface cards (NICs) have been tested for interoperability with Catalyst 2950 Series Switches?

A. The following NICs have been tested and confirmed as interoperable Catalyst 2950 Switches:

- 3Com 3c905 XL PCI #3c905-TX
- Compaq Netelligent 10/100 TX PCI UTP Option # 169845-00
- HP NetServer 10/100 TX PCI LAN Adapter #D5013
- Farrallon FastEthernet 10/100 TX PCI Card # PN996L-TX FastEtherTX-10/100 PCI Plus Card
- IBM 10/100 EtherJet PCI Adapter # 34L0801
- SOHOware PCI FastEthernet Card # SFA110A
- Netgear FA-310TX 10/100 FastEthernet PCI Card
- Intel PRO/1000[1] Server Adapter

1. Cisco and Intel have performed extensive interoperability testing between the Catalyst 2950 and the Intel PRO/1000 Server Adapter. Testing included auto-sensing/auto-negotiation for all duplex and speed settings on all types of ports (10/100 and 10/100/1000), VLAN tagging, and Fast/Gigabit EtherChannel technology

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