



Q&A

Cisco Catalyst 2970 Series Switches

PRODUCT OVERVIEW

Q. What is the Cisco® Catalyst® 2970 Series?

A. The Cisco Catalyst 2970 Series Switches are affordable Gigabit-to-the-desktop Ethernet switches that deliver wire-speed intelligent services for small and medium-sized businesses (SMBs) and enterprise branch offices. Featuring a complete set of intelligent services, the Catalyst 2970 Series Switches can enhance network performance and increase productivity for today's knowledge workers by intelligently scaling beyond 100 Mbps over existing Category 5 copper cabling.

The Cisco Catalyst 2970 Series consists of the following two configurations (Table 1):

Table 1. Cisco Catalyst 2970 Series Switch Configurations

| Product Name | Part Number | Description |
|---------------------|------------------|---|
| Catalyst 2970G-24TS | WS-C2970G-24TS-E | <ul style="list-style-type: none">• 24 Ethernet 10/100/1000 ports and 4 SFP-based Gigabit Ethernet ports• 1.5 rack unit (RU) standalone, multilayer switch• Enterprise-class intelligent services delivered to the network edge |
| Catalyst 2970G-24T | WS-C2970G-24T-E | <ul style="list-style-type: none">• 24 Ethernet 10/100/1000 ports• 1 RU standalone, multilayer switch• Enterprise-class intelligent services delivered to the network edge |

Q. What are Small Form-Factor Pluggable (SFP) transceivers?

A. SFP transceivers provide Gigabit Ethernet connectivity. They are functionally equivalent to gigabit interface converters (GBICs), but about half the size.

Q. What SFP transceivers are supported on Cisco Catalyst 2970 Series Switches?

A. The Cisco Catalyst 2970G-24TS Switch supports 1000BASE-LX/LH, 1000BASE-SX, 1000BASE-ZX, and 1000BASE-T SFP transceivers.

Q. Do the Cisco Catalyst 2970 Series Switches interoperate with SFP transceivers from other vendors?

A. No, like other Cisco switches and routers, the Cisco Catalyst 2970 Series Switches do not interoperate with other vendors' SFP transceivers. The switch will shut down the port if a third-party SFP transceiver is inserted.

Q. Does the Cisco Catalyst 2970 Series software image support classification and security based on Layer 3 and Layer 4 information?

A. Yes. Layer 3 and Layer 4 lookups are supported.

Q. Does the Cisco Catalyst 2970 Series support stacking?

A. No. The Cisco Catalyst 2970 Series does not have a stacking interface like the interface on Cisco Catalyst 3750 Series Switches. Consequently, there is no support for Cisco StackWise™ technology features.

Q. Can Cisco Catalyst 2970 Series Switches be stacked using 10/100/1000 ports?

A. Cisco Catalyst 2970 Series Switches can be interconnected (in a daisy-chain) with 10/100/1000 ports, providing for Layer 2 connectivity. However, this is a 1-Gbps link that will provide neither high-speed stacking nor the resiliency, unified management, and ease-of-use of the Cisco StackWise technology found in Cisco Catalyst 3750 Series Switches.

Q. Can Cisco Catalyst 2970 Series Switches stack with Cisco Catalyst 3560 Series Switches?

A. No. Cisco Catalyst 2970 Series Switches cannot stack with Cisco Catalyst 3560 Series Switches via Cisco GigaStack® stacking.

Q. Do Cisco Catalyst 2970 Series Switches have Redundant Power Supply (RPS) support?

A. Yes. Cisco Catalyst 2970 Series Switches can be supported by the Cisco RPS 675. The Cisco RPS 300 can be used with the Catalyst 2970G-24T, but not the Catalyst 2970G-24TS. The Cisco RPS 675 must be used for the latter. Both the Cisco RPS 675 and the Cisco RPS 300 provide superior internal power source redundancy for up to six Cisco networking devices, resulting in improved fault tolerance and network uptime.

Q. What is the difference between the Cisco RPS 675 and the Cisco RPS 300?

A. The Cisco RPS 675 is the next generation of the Cisco RPS 300. It provides more power (675W) than the Cisco RPS 300 (300W). The Cisco RPS 675 can provide up to 375W of -48V power, and 300W of 12V power. Unlike the Cisco RPS 300, the Cisco RPS 675 comes up in active mode—the customer does not need to push a button to activate the Cisco RPS 675 after a power failure. The Catalyst 2970G-24TS is supported only by the Cisco RPS 675.

INTELLIGENT SWITCHING

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

A. Networks 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 (WLAN) access points

These 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 effective management of 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 functions to the wiring closet, customers can now deploy networkwide intelligent services that address these requirements in a consistent way from the desktop to the core and through the WAN.

With Cisco Catalyst Intelligent Ethernet switches, Cisco Systems® helps companies to realize the full benefits of adding intelligent services to 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 is critical to further optimizing network operations.

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

A. Applications such as enterprise resource planning (ERP) (Oracle and SAP, for example), voice (IP telephony traffic), and CAD/CAM require prioritization over less time-sensitive applications such as FTP or Simple Mail Transfer Protocol (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 Intelligent Ethernet switches implement superior QoS to help ensure that network traffic is classified and prioritized.

Q. Why are intelligent services important when deploying Gigabit Ethernet at the network edge?

A. Intelligent services are important when deploying Gigabit Ethernet at the network edge to ensure that oversubscribed resources in the core are available for business-critical and delay-sensitive traffic. With employees having 1000 Mbps at their disposal, network resources could easily be overwhelmed with low-priority traffic without proper QoS policies to classify, police, and shape traffic.

SECURITY

Q. How does the Cisco Catalyst 2970 Series manage the security needs of a network?

A. With the rise in internal threats to a network, Cisco Ethernet switches enhance data security through numerous features, including Secure Shell (SSH) Protocol and Simple Network Management Protocol Version 3 (SNMPv3), access control lists (ACLs), 802.1X, port security, private virtual LAN (VLAN) edge, Dynamic Host Configuration Protocol (DHCP) interface tracker, MAC address notification, and RADIUS/TACACS+. Depending on your security needs, the Cisco Catalyst 2970 Series complements devices such as firewalls, VPNs, and intrusion detection systems (IDSs).

Q. For security purposes, how can I protect unauthorized users from accessing my network?

A. The Cisco Catalyst 2970 Series supports 802.1X, which works in conjunction with a RADIUS server to authenticate users as they access a network. The 802.1X standard is considered port-level security and is commonly used for WLANs. Additionally, portions of the network can be restricted by using ACLs. Access can be denied based on MAC addresses, IP addresses, or Transmission Control Protocol/User Datagram Protocol (TCP/UDP) ports. ACL lookups are done in hardware-forwarding and routing performance is not compromised when implementing ACL-based security. Port security is an additional protection method, which ensures that the appropriate user is on the network by limiting access to the port based on MAC addresses.

Q. For security purposes, how can I monitor or track activities in my network?

A. IDSs are tailored to monitor and track activities in a network. The Cisco Catalyst 2970 Series can complement this through features such as MAC address notification, which will send an alert to a management station so that network administrators know when and where users came on to the network and can take appropriate actions. The DHCP Interface Tracker (Option 82) feature will track where a user is physically connected on a network by providing both switch and port ID to a DHCP server.

Q. For security purposes, how do I protect administration passwords and traffic going to the switch during configuration or troubleshooting?

A. To protect administration traffic during the configuration or troubleshooting of a switch (such as passwords or device configuration settings), the best approach is to encrypt the data. Both SSH and SNMPv3 provide encryption of data during Telnet and SNMP sessions.

NETWORK MANAGEMENT

Q. Do Cisco Catalyst 2970 Series Switches support Cisco Switch Clustering technology?

A. Yes, they can be managed using the Cisco Network Assistant software, which uses Cisco Switch Clustering technology. Cisco Network Assistant is a PC-based network management application optimized for LANs of small and medium-sized businesses with up to 250 users. Cisco Network Assistant offers centralized management of Cisco switches, routers, and WLAN access points. It supports a wide range of Cisco Catalyst Intelligent Ethernet switches. Through a user-friendly GUI, users can configure and manage a wide array of switch functions and start the device manager of Cisco routers and Cisco wireless access points. Cisco Network Assistant is available at no cost and can be downloaded from Cisco.com.

Cisco Network Assistant provides an integrated management interface for delivering intelligent services, enabling users to manage their entire LAN with one robust tool. By bringing the simplicity of traditional LAN switching to intelligent services such as multilayer switching, QoS, multicast, and security ACLs, Cisco Network Assistant offers administrators benefits formerly reserved for only the most complex networks. The Guide mode in Cisco Network Assistant leads you through the configuration of high-end features and provides enhanced online help for context-sensitive assistance. In addition, a solution wizard provides automated configuration of the switch for video streaming or videoconferencing.

Cisco Network Assistant supports standards-based connectivity options such as Ethernet, Fast Ethernet, Cisco Fast EtherChannel® technology, Gigabit Ethernet, and Gigabit EtherChannel connectivity. Because Cisco Switch Clustering technology is not limited by proprietary stacking modules, stacking cables, or interconnection media, Cisco Network Assistant expands the traditional cluster

domain beyond a single wiring closet and lets you mix and match interconnections to meet specific management, performance, and cost requirements.

Cisco Catalyst 2970 Series Switches can be configured either as command or member switches in a Cisco switch cluster. Cisco Network Assistant also allows you to designate a standby or redundant command switch, which takes the commander duties should the primary command switch fail. Other important features include the ability to configure multiple ports and switches simultaneously, as well as perform software updates across the entire cluster at once. Bandwidth graphs and link reports provide useful diagnostic information, and the topology map gives network administrators a quick view of the network status.

Q. Is the Cisco Catalyst 2970 Series available with Web-based setup?

A. Yes. Cisco Express Setup is available on the Cisco Catalyst 2970 Series. This feature simplifies the initial “out-of-the-box” deployment experience of Cisco Catalyst fixed-configuration switches. In the past, users had to connect a computer to the console port of the switch (using a special rollover cable), launch a terminal emulation program, and then configure an IP address, switch name, and password via the command-line interface (CLI). With Express Setup, the user can now simply connect a PC with an Ethernet cable into any port on the switch, hold the “mode” button to activate Express Setup, and launch a Web browser. The switch can then be set up using a single Webpage.

POSITIONING

Q. Where would I deploy a Cisco Catalyst 2970 Series Switch?

A. The Cisco Catalyst 2970 Series is designed for deployment in high-performance departmental workgroups, SMBs, and branch-office deployments requiring Gigabit-to-the-desktop, but where stacking is not required. The Cisco Catalyst 2970 Series delivers intelligent services such as advanced QoS, rate limiting, security filtering, and multicast management to the network edge.

SOFTWARE UPDATES

Q. For which fixed-configuration and stackable Cisco Catalyst switch product series can I obtain a “no additional cost” Cisco IOS Software update?

A. Cisco offers ongoing Cisco IOS Software updates for the following fixed-configuration and stackable Cisco Catalyst switch product series at no additional cost. For the life of the product, updates within the Cisco IOS package purchased (such as LAN Base, IP Base, IP Services, etc.) will be made available to customers.

- Cisco Catalyst Express 500 Series Switches
- Cisco Catalyst 2900 XL Series Switches
- Cisco Catalyst 2940 Series Switches
- Cisco Catalyst 2948G-GE-TX Series Switch
- Cisco Catalyst 2950 Series Switches
- Cisco Catalyst 2950 LRE Series Switches
- Cisco Catalyst 2955 Series Switches
- Cisco Catalyst 2960 Series Switches
- Cisco Catalyst 2970 Series Switches
- Cisco Catalyst 3500 XL Series Switches
- Cisco Catalyst 3550 Series Switches
- Cisco Catalyst 3560 Series Switches
- Cisco Catalyst 3750 Series Switches

- Cisco ME 2400 Series Ethernet Access Switches
- Cisco ME 3400 Series Ethernet Access Switches

Note that **upgrades** are different from **updates**. For example, an upgrade from the IP Base Package to the IP Services Package provides significant new functions; therefore, this upgrade requires the purchase of a software license upgrade. Updates are incremental software features and bug fixes that are released within a Cisco IOS Software package for which you own a license.

This statement supersedes any previous warranty or software statement and is subject to change without notice.

Q. How do I get a “no additional cost” Cisco IOS Software update for my fixed-configuration and/or stackable Cisco Catalyst switch?

- A.** Customers that own a software license for any of the aforementioned fixed-configuration and/or stackable Cisco Catalyst switch product series (listed previously) may obtain a software update at the Cisco.com Website.

Go to the following URL: <http://tools.cisco.com/support/downloads/pub/MDFTree.x?butype=switches> or from <http://www.cisco.com> click on “Downloads” and select “Switch Software”. To download software, you will be required to log in using your Cisco.com username and password. If you do not have a Cisco.com username, you can obtain one by clicking on “Register” at the top of any Cisco.com Webpage (<http://tools.cisco.com/RPF/register/register.do>).

WARRANTY AND SERVICE

The hardware warranty available on the Cisco Catalyst 2900 XL and Catalyst 3500 XL Series and Cisco Catalyst Express 500, Catalyst 2940, Catalyst 2950, Catalyst 2960, Catalyst 2970, Catalyst 3550, Catalyst 3560, and Catalyst 3750 Series is the Limited Lifetime Hardware Warranty. This warranty automatically comes with the purchase of eligible Cisco Catalyst products, free of charge. For specific details on the Cisco Limited Lifetime Hardware Warranty, visit: <http://www.cisco.com/go/services>.

Q. What types of service and support is available for the Cisco Catalyst 2970 Series?

- A.** A full complement of lifecycle service and support is available for the Cisco Catalyst 2970 Series. From implementation to operation and optimization, Cisco offers Technical Support Service and Advanced Service delivered either directly or through one of its best-in-class partners.

TECHNICAL SUPPORT SERVICE

Technical Support Service is available through Cisco SMARTnet[®] service and SMARTnet Onsite service. The Cisco SMARTnet service augments the resources of your operations staff by providing them with access to expertise, both online and on the telephone, and numerous hardware Advance Replacement options. The Cisco SMARTnet Onsite service complements the hardware Advance Replacement feature by adding the services of a field engineer-services that can be critical for locations where internal staff are unavailable to replace parts. For more information about the Cisco SMARTnet service, visit:

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

PRODUCT AND CONTACT INFORMATION

Q. Where can I find technical and product specifications and other information about Cisco Catalyst 2970 Series Switches?

- A.** For Cisco Catalyst 2970 Series product literature, including data sheets and product specifications, visit: <http://www.cisco.com/go/catalyst2970>.

Q. What are the part numbers for the Cisco Catalyst 2970 Series? When are they orderable?

- A.** The part numbers are listed at the beginning of this product bulletin. The products are orderable now. For further information visit: <http://www.cisco.com/go/catalyst2970>.



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