

# 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 businesses 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:

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

**Q.** What software image does the Cisco Catalyst 2970 Series support?

**A.** The Cisco Catalyst 2970 Series is available with Cisco Enhanced Image (EI) IOS® Software that offers a complete set of intelligent multilayer services to deliver security, quality of service (QoS), and availability with the simplicity of traditional LAN switching. Features such as access control list (ACL) filtering and QoS classification bring security to the edge of the network while enabling applications such as IP telephony and real-time streaming multimedia.

**Q.** Does the Cisco Catalyst 2970 Series software image support IP routing?

**A.** No.

**Q.** Is an upgrade image available?

**A.** No. The Cisco Catalyst 2970 Series has only one software image.



Q. What are small form-factor pluggables (SFPs)?

A. Small form-factor pluggables (SFPs) are transceivers that provide Gigabit Ethernet connectivity. They are functionally equivalent to Gigabit Interface Converters (GBICs), but about half the size.

Q. What SFPs are supported on Cisco Catalyst 2970 Series switches?

A. Cisco Catalyst 2970G-24TS switches support 1000BASE-LX/LH, 1000BASE-SX, 1000BASE-ZX, and 1000BASE-T SFPs.

Q. Do the Cisco Catalyst 2970 Series switches interoperate with SFPs from other vendors?

A. No, like other Cisco switches and routers, the Cisco Catalyst 2970 switches do not interoperate with other vendors' SFPs. The switch will shut down the port if a non-Cisco SFP 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 3550 Series switches?

A. No. Cisco Catalyst 2970 Series switches cannot stack with Cisco Catalyst 3550 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 Cisco RPS 675 and the Cisco RPS 300?

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 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 Intelligent Ethernet switches, Cisco 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 are 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 File Transfer Protocol (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 handle the security needs of a network?

With the rise in internal threats to a network, Cisco Ethernet switches enhance data security through numerous features, including Secure Shell (SSH) and Simple Network Management Protocol Version 3 (SNMPv3) protocols, ACLs, 802.1x, port security, private virtual LAN (VLAN) edge, Dynamic Host Configuration Protocol (DHCP) interface tracker, MAC address notification, and Remote Authentication Dial-In User Service/Terminal Access



A. Controller Access Control System (RADIUS/TACACS+). Depending on your security needs, the Cisco Catalyst 2970 Series complements devices such as firewalls, virtual private networks (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. Does the Cisco Catalyst 2970 Series supports Cisco Switch Clustering technology?

A. Yes. Cisco Catalyst 2970 Series switches can be managed using the Web-based Cisco Cluster Management Suite (CMS) Software, which uses Cisco Switch Clustering technology. Cisco CMS Software is Web-based and is embedded in Cisco Catalyst 3750, 3550, 2970, 2950, 3500 XL, 2900 XL, 2900 LRE XL, and 1900 series switches. Through Cisco Switch Clustering technology, users access Cisco CMS Software with any standard Web browser to manage up to 16 of these switches at once, regardless of their geographic proximity, and with the option of using a single IP address if desired.

Cisco CMS Software 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 CMS Software allows administrators to take advantage of benefits formerly reserved for only the most complex networks. The new Guide Mode in Cisco CMS Software leads the user step-by-step 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. Future software releases will provide solution wizards for voice over IP (VoIP), mission-critical applications, and security.



Cisco CMS Software supports standards-based connectivity options such as Ethernet, Fast Ethernet, Cisco Fast EtherChannel®, Gigabit Ethernet, and Gigabit EtherChannel connectivity. Because Cisco Switch Clustering technology is not limited by proprietary stacking modules, stacking cables, or interconnection media, Cisco CMS Software expands the traditional cluster domain beyond a single wiring closet and lets users 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 CMS Software 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 important features include the ability to configure multiple ports and switches simultaneously, and to 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 Web page.

#### Positioning

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

A. The Cisco Catalyst 2970 Series is designed for deployment in high-performance departmental workgroups, small and medium businesses, 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.

#### Service and Warranty

Q. What is the warranty for the Cisco Catalyst 2970 Series?

A. Cisco Catalyst 2970 Series switches come with the Cisco Limited Lifetime Hardware Warranty. Ongoing software updates are available to customers free of charge at Cisco.com.

#### **Limited Lifetime Warranty**

The hardware warranty available on Cisco Catalyst 3750, 3550, 2970, 2950, and 3500 XL series products 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/en/US/products/svcs/ps11/services\\_segment\\_category\\_home.html](http://www.cisco.com/en/US/products/svcs/ps11/services_segment_category_home.html)



### **Software Updates**

In addition to the Limited Lifetime Hardware Warranty, Cisco is offering ongoing Cisco IOS Software updates on LAN access switches free of charge for these platforms. For the life of the product, updates within the release and feature set purchased will be made available to customers through the Cisco Software Center at:

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

Ongoing software updates will be available for the Cisco Catalyst 2970 Series. 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 types of service and support are available for Cisco Catalyst 2970 Series switches?

A. A full complement of life-cycle 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<sup>®</sup> 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 perform parts replacement activities. For more information about the Cisco SMARTnet service, visit:

[http://www.cisco.com/en/US/products/svcs/ps3034/ps2827/serv\\_group\\_home.html](http://www.cisco.com/en/US/products/svcs/ps3034/ps2827/serv_group_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 helping to ensure correct installation and deployment. Configuration services now include development and verification of configuration for intelligent services such as QoS and multicast.

For more information about configuration services for QoS and multicast, contact [gps-pds-west@cisco.com](mailto:gps-pds-west@cisco.com).

### **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 document.  
The products are orderable now. For further information visit:  
<http://www.cisco.com/go/catalyst2970>

Q. How can I get additional questions about the Cisco Catalyst 2970 Series answered?

A. You can send inquiries about the Cisco Catalyst 2970 Series switches to: [ask-c2970-pm@cisco.com](mailto:ask-c2970-pm@cisco.com).



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