Catalyst 2600

This chapter provides information on the Catalyst 2600 Token Ring switch. The information is organized into the following sections:

- Product Overview
- Standard Features
- Expansion Modules
- Product Numbers

Note Documentation for the Catalyst 2600 is available in two forms: on a CD-ROM called Cisco Connection Documentation, Enterprise Series and printed books. A CD and hard-copy installation documentation ship with each chassis, and a configuration note ships with each component ordered. All configuration notes are available on the CD. Additional CDs and a subscription CD update service are also available.

You can also access Cisco technical documentation on the World Wide Web URL http://www.cisco.com. For more information, see the chapter "Documentation" at the end of the catalog.

Product Overview

The Catalyst 2600 is a Token Ring switch that provides high-speed forwarding of frames among the segments attached to each of its ports. The Catalyst 2600 can forward frames among multiple, shared, or dedicated Token Ring LAN segments. Each of the ports on the switch can be connected to a port on any external Token Ring hub or concentrator using a customer-supplied cable. Alternatively, a Token Ring port on the Catalyst 2600 can be connected directly to a half-duplex (HDX) or full-duplex (FDX) Token Ring LAN station without an intervening Token Ring concentrator or hub.

The architecture of the Catalyst 2600 centers around the AXIS bus, a 512-Mbps switching fabric through which all switched ports communicate. To avoid the congestion problems that can occur when multiple ports communicate with a single port, each port has 512 KB of buffering, fairness algorithms, and split-buffer schemes.

To address the needs of delay-sensitive data, such as multimedia, this switching fabric contains two data queues. Frames assigned a priority of 5, 6, or 7, such as multimedia transmissions, are sent to the high-priority queue and given forwarding preference. Frames assigned a priority of 4 or lower are processed through the normal-priority queue.
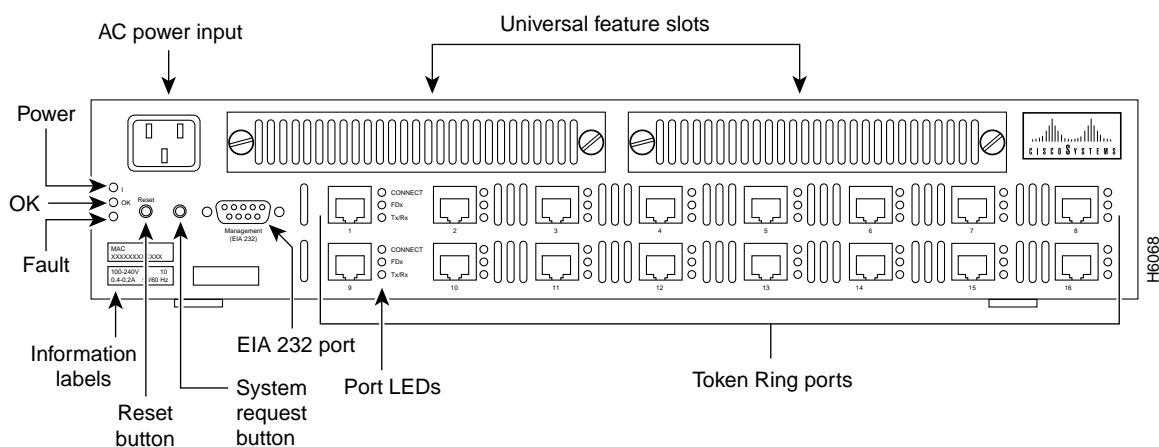
To provide increased bandwidth, you can use the Catalyst 2600 to create multiple, concurrent paths among connected segments. Each path supports the full16-Mbps Token Ring bandwidth. With a parallel internal design optimized for performance, the Catalyst 2600 can forward Token Ring frames between each of the pairs of ports simultaneously and at media speeds.

The Catalyst 2600 can forward frames based on MAC address lookup. If you have source-route bridges in your network, the Catalyst 2600 can also forward frames based on the routing information field. This dual frame forwarding technique is called *source-route switching*.

You can select from three modes of operation for each port on the Catalyst 2600: cut-through mode, store-and-forward mode, and adaptive cut-through mode. In *cut-through mode*, the Catalyst 2600 begins forwarding frames as they are received; it does not wait to receive the entire packet before forwarding. This provides the benefits of dedicated-media, high-speed switching. *Store-and-forward mode* offers more error isolation between the segments, as the Catalyst 2600 waits until the entire frame is received and checked for errors before forwarding. *Adaptive cut-through mode* optimizes performance by alternating between cut-through and store-and-forward modes based on user-specified thresholds.

Figure 129 shows the front view of the Catalyst 2600. Table 261 summarizes the features of the Catalyst 2600, and Table 262 lists the environmental specifications

Figure 129 Catalyst 2600 Front View

Table 261   Catalyst 2600 Summary of Features

Characteristic	Description
Ports	16

Front panel indicators	Base switch:
	  Port: transmit, receive, connect, full duplex
	  System power
	  Diagnostic
	  Fault
	2-port fiber feature card:
	  Port: transmit, receive, connect, full duplex
	  Ring In/Ring Out
	  Diagnostic
	  Fault
	4-port UTP/STP feature card:
	  Port: transmit, receive, connect, full duplex
	  Diagnostic
	  Fault

Expansion modules	2-port fiber Token Ring, 4-port UTP/STP Token Ring
Buffers	512 KB per port
Addresses	1790 addresses per port; 10,000 per system
Protocol compatibility	Transparent to higher-level protocols
Network management	SNMP MIB II (RFC 1213) Interface Table (RFC 1573) Managed Objects for Bridges (RFC 1493) IEEE 802.5 Token Ring (RFC 1231) Catalyst 2600 MIB
Dimensions (H x W x D)	Standalone: 3.5 x 17.3 x 14" (89 x 440 x 356 mm) Rack-mount: 3.5 x 19 x 14" (89 x 483 x 356 mm)
Memory	4 MB DRAM
Processor	Intel i960SA
Weight	17 lbs (7.7 kg)

Table 262   Catalyst 2600 Environmental Specifications

Description	Specification
Temperature	50 to 104 F (10 to 40 C)
Relative humidity	8% to 80%
Max wet-bulb temperature	81 F (27 C)
Calorific value	85 kcal/hr (345 Btu/hr)
Electrical power	0.2 kVA
Capacity of exhaust	10.6 ft/min (0.6 m/min
Noise level	56 dB
Leakage/starting	Current 0.5 ma/40 amperes/half cycle

Standard Features

The Catalyst 2600 provides the following features:

- A fully functional default configuration that accommodates many current network configurations.

- An easy-to-use console interface for configuration and management, which you can access via a console or Telnet connection.

- Automatic learning of network configuration.

- Automatic sensing and configuring of ports. A factory-assigned station, or Media Access Control (MAC) address. The Catalyst 2600 can also be configured with an IP address.

- Support for the 802.1d spanning-tree algorithm.

- A virtual LAN (VLAN) feature allows you to partition a single Catalyst 2600 into multiple domains.

- User-configurable address aging.

- An address filtering feature allows you to specify up to 100 source or destination MAC addresses to be selectively filtered at the port of entry into the Catalyst 2600.

The Catalyst 2600 has 16 Token Ring ports and can support a maximum of 1790 active Token Ring MAC addresses per port. Configurations larger than 16 Token Ring LAN segments can be constructed as follows:

- Adding multiport feature cards. The Catalyst 2600 contains two feature slots that can accommodate optional, field-installable feature cards that provide additional connections.

- Connecting Catalyst 2600 switches together using any of the ports on each switch, to form a TokenChannel. TokenChannels are two to four parallel links that connect Catalyst 2600 switches. TokenChannels provide a capacity between the two Catalyst 2600 switches of up to 64 Mbps in HDX mode and up to 128 Mbps if all ports in the TokenChannel are operating in FDX mode.

To aid in network management, the Catalyst 2600 also maintains status information and a variety of statistics. Status information is available for each port and for each TokenChannel, if defined. Statistics are kept by port, by domain, and for the switch as a whole.

The Catalyst 2600 also contains an Simple Network Management (SNMP) MIB-II compliant management agent that allows a customer-supplied SNMP-based network management system (such as CiscoView) to remotely monitor and control the Catalyst 2600.
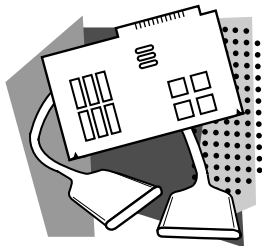
In addition, the Catalyst 2600 provides switched port analyzer support, which allows you to monitor traffic on any of the Token Ring ports using a customer-supplied monitoring device such as the Network General Sniffer.

If you need to upgrade the Catalyst 2600 software, you can upgrade through the same serial port used for configuration. The code can be downloaded from a customer-supplied programmable workstation using the Xmodem protocol. Code upgrades can also be accomplished using Trivial File Transfer Protocol (TFTP).

Expansion Modules

The Catalyst 2600 Token Ring switch supports up to two expansion modules, or feature cards. The feature cards can be the following:

- Four-port UTP/STP Token Ring
- Two-port fiber Token Ring

Product Numbers

The Catalyst 2600 ships with a power supply, power cable, and documentation. Table 263 lists the product numbers you can use to order the Catalyst 2600 and its expansion modules. If a product number ends with an equal sign (=), the item can be ordered only as a spare. If a product number does not end with an equal sign, the item can be ordered as a spare or as a configurable part of a system order.

Table 263   Catalyst 2600 Product Numbers

Description	Product Numbers
16-port Catalyst 2600 Token Ring switch	WS-C2600
Catalyst 4-port UTP/STP Token Ring feature card	WS-C2600-4R
Catalyst 2-port Fiber Token Ring feature card	WS-C2600-2RF