

# Data Sheet

## Fast Ethernet Switching for High-Performance Workgroups, Backbones, and Server Clusters

The Catalyst™ 2900 Fast Ethernet series is a low-cost, fixed-configuration switching system that provides low-density Fast Ethernet connectivity for wiring closet and data center applications. The Catalyst 2900 is the first Fast Ethernet switch with a complete virtual LAN (VLAN) solution and the first to deliver embedded remote monitoring (RMON). The fixed-configuration design enables users to deploy 100-Mbps Fast Ethernet connections to existing LAN segments or high-performance workstations and servers using UTP or fiber-optic cable. The switch architecture includes a single integrated 1.2-gigabits-per-second (Gbps) data switching backplane that supports wire-speed Fast Ethernet across interfaces that include 10/100BaseTX (UTP) and 100BaseFX fiber.

Up to 1000 VLANs can be maintained across switching and routing platforms through Fast Ethernet, CDDI/FDDI, and ATM connections. Any Fast Ethernet interface on the Catalyst 2900 series system can be configured as an Inter-Switch Link (ISL) to support multiple VLANs, and all VLANs support the IEEE 802.1d spanning-tree algorithm for fault-tolerant connections. Dynamic ISL (DISL) synchronizes configuration of two connected Fast Ethernet interfaces into trunk links.

### Architecture

The Catalyst 2900 system is an ASIC-based architecture, delivering superior network traffic throughput, traffic management, and layer 2 switching functionality. The Supervisor Engine provides switching and network management. The system can switch over one million packets per second. Ethernet to Ethernet or Fast Ethernet packet latency is less than 10 microseconds. The data switching bus supports three priority queues, enabling users to define priorities on a per-port basis. Software features are easily upgraded through the 4 MB Flash EPROM via software download. Startup diagnostics, run-time diagnostics, and environmental monitoring make troubleshooting easy.



## Catalyst 2900 Fast Ethernet Switching System

**The Catalyst 2900 Fast Ethernet switch with embedded traffic management delivers the industry's best performance for backbone, wiring closet, or server cluster applications.**

The 14-port fixed configuration chassis of the Catalyst 2900 series features the ASIC-based, award-winning switching architecture deployed in the Catalyst 5000. Each configuration includes a Supervisor Engine with two 100BaseTX or MII connections and one of the following:

- 12 interfaces—10/100BaseTX (10/100-Mbps Fast Ethernet) with auto negotiation and auto sensing
- 12 interfaces—100BaseFX (100-Mbps Fast Ethernet)

IEEE 802.3u auto negotiation and auto sensing for the 10/100BaseTX version enables easy migration for users upgrading network performance from 10 Mbps to 100 Mbps.

The Catalyst 2900 series system supports the formation of VLAN workgroups within and between other Catalyst 2900, Catalyst 3000, and Catalyst 5000 series switches, as well as Cisco 7000/7500 and Cisco 4500/4700 routers.

### Embedded RMON/Traffic Management

Advanced management features make the Catalyst 2900 easy to manage in fast-growing networks. The Switched Port Analyzer (SPAN) functionality enables the user to mirror traffic on any port or VLAN for analysis by a sniffer or RMON probe. Embedded RMON in the Catalyst 2900 system enables users to access the RMON statistics, history, alarms, and events groups for any port.

### Features

- Superior network traffic throughput: Wire-speed 10/100-Mbps performance, high-performance low-latency 1.2-Gbps switching backplane with trilevel priority, large interface buffers (192 KB) to accommodate bursty traffic, load sharing on ISL for 800-Mbps and above throughput
- Low latency: ASIC hardware-based support for static entries and self-learning of the 16,000 active MAC addresses and associated VLANs in bridge lookup table functions



- 10/100BaseTX Fast Ethernet switching module supports IEEE 802.3u auto-negotiation process that allows the switch to negotiate speed (10 or 100 Mbps) or duplex mode (half- or full-duplex mode) with an attached device
- 10/100BaseTX Fast Ethernet switching module will auto sense speed and duplex modes if the attached device does not negotiate with the switch
- Complete, easy to configure and manage VLAN solution: Fully integrated support for 1000 VLANs, including Cisco's ISL, DISL, Cisco Discovery Protocol (CDP), and VLAN Trunk Protocol (VTP)
- Superior traffic management: RMON statistics provide superior visibility of network traffic activity: statistics, history, events, and alarms groups. The SPAN functionality enables the user to mirror traffic on any port or VLAN for analysis by a sniffer or RMON probe
- Fault tolerant connectivity: Supports spanning tree algorithm on logical VLANs, and load sharing of VLANs across ISL

## Catalyst 2900 Specifications

### Standard Network Protocols

- Ethernet: IEEE 802.3, 10BaseT
- Fast Ethernet: IEEE 802.3u, 100BaseTX, 100BaseFX

### Physical Specifications

- Dimensions (h x w x d): 3.4 x 17.25 x 23 in (8.5 x 43.8 x 58.4 cm)
- Weight: Typical: 41 lb (18.6 kg), average shipping: 52 lb (23.6 kg)

### Power Requirements

- 3 Amps @ 100-240 VAC 50-60 Hz
- Power consumption: 264 Watts

### Environmental Conditions

- Operating Temperature: 32° to 104° F (0° to 40° C)
- Storage Temperature: -40° to 167° F (-40° to 75° C)
- Relative Humidity: 10 to 90%, noncondensing

### Safety Certifications

- UL 1950
- EN 60950
- CSA-C22.2 No. 950 93

### Electromagnetic Emissions Certifications

- FCC Class A (47 CFR Part 15)
- VCCI Class 2, Shielded UTP
- EN 55022A Class B, Shielded UTP
- CE Mark

### Memory

- 4 MB of Flash memory
- 256 KB NVRAM
- 8 MB DRAM
- 512 KB EPROM

### Processor

- Network management processor: Motorola 68EC040

### Buffer Memory

- RAM: 192 KB per interface

### Frame Processing

- Transparent Bridging (802.1d)
- Maximum of 16,000 active MAC addresses in the bridge lookup table, dynamic allocation per port

### Network Management

- CDP
- Interface Table (RFC 1573)
- VTP
- Bridge MIB (RFC 1493)
- SNMP agent (RFC 1155-1157)
- Cisco workgroup MIB
- SNMP MIB II (RFC 1213)
- Telnet
- Ethernet MIB (RFC 1398)

### Network Management Applications Supported

- CiscoView™
- VlanDirector™
- TrafficDirector™

### System Indicators and Interfaces

- Status: Green (operational) / Red (Faulty)
- Switch Load: 1 to 100% Aggregate Backbone Usage
- Link Good: Green (On) / Orange (Disabled) / Off (Not Connected)
- Power Status: Green (On) / Red (Faulty) / Off (Not Present)
- Fan Status: Green (On) / Red (Faulty)
- Supervisor Engine Console: DB-25 (Female)

### Maximum Station-To-Station Cable Distance

- 10/100BaseTX Ethernet: Category 5 UTP: 328' (100 m)
- 100BaseFX Ethernet: 62.5/125 micron fiber (400 m half duplex, 2 km full duplex)
- 100BaseTX Ethernet: Category 5 UTP: 328' (100 m)

### Fast Ethernet Port Indicators and Interfaces

- Status: Green (operational) / Red (Faulty)
- Link Good: Green (On) / Orange (Disabled) / Off (Not Connected)
- 100 Mbps Fast Ethernet: Green (100 Mbps) Off (10 Mbps)
- 10/100BaseTX: RJ-45 (Female), autosensing
- 100BaseFX: SC (Female)
- 100BaseTX: RJ-45 (Female), MII (Female) on Supervisor Engine only

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