

Catalyst 1900 and 2820 Ethernet Switches

Cisco Systems' Catalyst 1900 and 2820 series switches, available in Standard and Enterprise editions, provide industry-leading performance and Cisco end-to-end network integration at an exceptionally affordable price. Enterprise Edition software enables these switches to deliver unmatched network configuration flexibility and scalability through embedded Cisco IOS technologies, delivering comprehensive management and security, bandwidth optimization, networked multimedia, and virtual LAN (VLAN) support.

The Catalyst® 1900 series switches deliver the industry's best value for today's Ethernet networks. For an extremely low price per port, these switches provide a dedicated 10-Mbps of bandwidth to the desktop and high performance connectivity between hub-based workgroups.

The modular Catalyst 2820 series switches are the ideal solution for Ethernet workgroups and individual users who need increased performance at an affordable price, and 100BaseT, Fiber Distributed Data Interface (FDDI), or Asynchronous Transfer Mode (ATM) connectivity to servers and network backbones.

The Catalyst 1900 and 2820 series switches offer the broadest range of models that vary in port density, media type, and uplink options. The Catalyst 1900 supports high-speed server and backbone connections using unshielded twisted-pair (UTP) wire or a combination of fiber-optic cable and UTP. Designed to meet diverse media requirements, the versatile Catalyst 2820 series switch has two expansion slots for choice of high-speed interconnect modules—switched and shared 100BaseTX and 100BaseFX, ATM and FDDI modules.

Enterprise Edition Software

Catalyst 1900 and 2820 series switches offer unmatched network flexibility and scalability for larger networks when combined with Enterprise Edition software. Through embedded Cisco IOS technologies, Enterprise Edition software delivers comprehensive management and security, bandwidth optimization, networked multimedia and VLAN

support. Enterprise Edition software is available preinstalled with Enterprise Edition models, and is optional with upgradeable, Standard Edition models.



Enterprise Edition software includes features such as bandwidth aggregation on Fast Ethernet ports to provide up to 400 Mbps of bandwidth between switches, to routers, and individual servers. End-to-end dynamic VLANs provide simplified network-wide adds, moves, and changes, firewall protection, and broadcast control. Finally, comprehensive management and simplified troubleshooting are available on a per-port and per-switch basis through Remote Monitoring (RMON), Telnet, and out-of-band management console support.

Catalyst switches are backed by Cisco Systems' service and support and the technology leadership that extends the reach of more networks worldwide.

Key Features/Benefits

Performance

- Twelve or twenty-four 10BaseT ports deliver additional 10 Mbps of bandwidth to individual users or workgroups to support bandwidth-intensive applications
- Two 100BaseT ports (Catalyst 1900) or two high-speed expansion slots (Catalyst 2820) provide maximum high-speed configuration and backbone flexibility
- One Attachment Unit Interface (AUI) port for connecting to fiber or legacy 10Base2 or 10Base5 networks
- Shared-memory architecture with 3-MB packet buffer virtually eliminates packet loss
- Nonblocking, ClearChannel architecture supports wire-speed bridging on all ports, delivering up to 370 Mbps maximum forwarding bandwidth, and 550,000 pps aggregate
- CollisionFree full-duplex operation on switched 10BaseT and 100BaseT ports delivers up to 200 Mbps of bandwidth to end stations, servers and between switches
- Choice of congestion control options for applications that require zero packet loss:
 - Enhanced congestion control accelerates packet forwarding when the switch buffers are full
 - Backpressure on half-duplex Ethernet ports throttles network transmission using the IEEE 802.3 Layer 2 back-off algorithm
 - IEEE 802.3x flow control on 100BaseTX ports provides intelligent flow management between switches and between a switch and a server
- Per-port broadcast storm control prevents faulty end stations from degrading overall system performance with broadcast storms
- Choice of cut-through or store-and-forward switching lets administrators optimize for performance or error checking

Security and Redundancy

- IEEE 802.1d Spanning-Tree Protocol support for redundant backbone connections and loop-free networks simplifies network configuration and improves fault tolerance
- User-selectable address learning mode simplifies configuration and enhances security
- Support for optional, Cisco 600 watt redundant AC power system provides a backup power source for up to four units for improved fault tolerance and network uptime

Flexible Network Configuration

- No per-port Media Access Control (MAC) address limitations—support for 1024 MAC addresses on Catalyst 1900 and up to 8192 addresses on Catalyst 2820
- Configurable network port that supports unlimited MAC addresses for backbone connectivity

Management

- Simple Network Management Protocol (SNMP) and Telnet support delivers comprehensive in-band manageability, and a menu-based management console provides in-depth, out-of-band manageability
- Support for all nine RMON groups through use of a SwitchProbe™ Analyzer port that permits traffic monitoring of a single port, a group of ports, or the entire switch from a single network analyzer or RMON probe
- Integrated HTML interface enables management via a Web browser*
- Cisco Discovery Protocol (CDP) enables a CiscoWorks network management station to automatically discover the switch in a network topology
- Autonegotiation on 100BaseTX ports automatically selects half- or full-duplex transmission mode to optimize bandwidth

Enterprise Edition Software

- Available preinstalled on all Enterprise Edition models or as a Flash upgrade for Standard Edition models
- Up to 1024 port-based VLANs with Inter-Switch Link (ISL) trunking on 100BaseT ports provide broadcast control, firewall protection and simplified adds, moves, and changes
- Up to 64 ATM emulated LANs
- Up to 64 VLANs with separate spanning tree per VLAN

- Bandwidth aggregation through Fast EtherChannel® enhances fault tolerance and offers up to 400 Mbps of bandwidth between switches, and to routers and individual servers*
- Cisco Group Management Protocol (CGMP) enables a switch to selectively and dynamically forward routed IP multicast traffic to targeted multimedia end stations, reducing overall network traffic
- Embedded RMON software agent supports four RMON groups (History, Statistics, Alarms, and Events) for enhanced traffic management, monitoring, and analysis
- ATM Director™ support allows management of Catalyst 2820 in an ATM network.
- Multilevel security on console access prevents unauthorized users from altering the switch configuration*
- Autoconfiguration eases deployment of switches in the network by automatically configuring multiple switches across a network via a boot server*

**Feature will be available in a future software release*

Technical Specifications

Performance

- 1-Gbps bus
- 370-Mbps maximum forwarding bandwidth
- 3-MB packet buffer memory dynamically shared by all ports
- Selectable switching option:
 - FragmentFree™ cut-through—forward after collision window (64 bytes)
 - Store and forward—forward after packet receipt
- Packet forwarding rate for 64-byte packets:
 - 14,880 packets per second (pps) to 10-Mbps ports
 - 148,800 pps to 100BaseT module ports
 - Up to 100,000 pps to FDDI module ports
 - Up to 550,500 pps aggregate
- Latency (FragmentFree cut-through switching mode):
 - 70 microseconds between 10BaseT ports
 - 11 microseconds between 100BaseT ports
- MAC addresses:
 - 1024 per system (Catalyst 1900 series)
 - 2048 or 8192 per system (Catalyst 2820 series)
 - Unlimited MAC address support on configurable network port

Management

- SNMP Management Information Base (MIB) II, SNMP MIB extensions, Station
- Management (SMT) 7.3, FDDI MIB, Bridging MIB (RFC 1493)

Standards

- IEEE 802.3x full duplex on 10BaseT and 100BaseT ports
- IEEE 802.3x flow control on 100BaseT ports
- IEEE 802.1d Spanning-Tree Protocol
- IEEE 802.3u 100BaseTX and 100BaseFX specifications
- IEEE 802.3 10BaseT specification
- IEEE 802.3 AUI specification
- ATM Forum LANE 1.0; UNI 3.0/3.1; RFC 1483

Connectors and Cabling

- 10-Mbps ports: RJ-45 connectors; two-pair Category 3, 4 or 5 UTP cabling; DB15 connector on AUI port
- 100BaseTX ports: RJ-45 connectors; two-pair Category 5 UTP cabling
- 100BaseFX port: SC connector, 50/125- and 62.5/125-micron multimode fiber-optic cabling
- Management console port: RJ-45 connector

Indicators

- Per-port status LEDs—Link Integrity, Disabled, Activity, and Full-Duplex indications
- System status LEDs—System, RPS, Module Enabled, and bandwidth utilization indications

Dimensions and Weight (H x W x D)

- Catalyst 1900 series:
 - 1.73 x 17.5 x 8.25 in (4.39 x 44.45 x 21 cm)
 - 7 lb (3.2 kg)
- Catalyst 2820 series:
 - 3.43 x 17.5 x 12.4 in (8.76 x 44.45 x 31.5 cm)
 - 13 lb (5.9 kg)

Environmental Conditions and Power Requirements

- Operating temperature: 23 to 113 F (-5 to 45 C)
- Operating relative humidity: 10 to 85% noncondensing
- Operating altitude: Up to 9842 ft (3000 m)
- Power consumption: 50W (Catalyst 1900), 110W (Catalyst 2820)
- AC input voltage/frequency: 90 to 127/200 to 250 VAC (autoranging) 50 to 60 Hz

Safety and Electromagnetic Emissions Certifications

- UL 1950
- CSA 22.2 No. 950
- EN 60950
- IEC 950
- FCC Part 15 Class A, verified to Class B
- CE Marking
- EN 55022B Class B
- VCCI Class II

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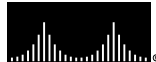
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