

# Overview

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This chapter describes the Enterprise Edition software features for Catalyst 2820 and Catalyst 1900 switches. It also describes the feature default settings and shows the management console main menu used to configure and manage your network.

For detailed descriptions of the hardware and baseline software features, refer to the *Catalyst 2820 Series Installation and Configuration Guide* and the *Catalyst 1900 Series Installation and Configuration Guide*.

For menu-by-menu configuration and conceptual information about specific software features, such as virtual LANs (VLANs), Cisco Group Management Protocol (CGMP), or Remote Monitoring (RMON), refer to the chapter documenting that feature.

## About the Catalyst 2820 and Catalyst 1900 Switches

The Catalyst 2820 and Catalyst 1900 switches are designed for Ethernet workgroups and individual users requiring 100-Mbps connectivity to servers and backbones. Catalyst 2820 and Catalyst 1900 switches use shielded twisted-pair, unshielded twisted-pair (UTP), or fiber-optic cable. Table 1-1 and Table 1-2 describe the Catalyst 2820 and Catalyst 1900 switch models.

**Table 1-1 Catalyst 2820 Switch Models**

Part Number	Description	Number of Addresses	Number of Ports	Number of Module Slots
WS-C2822-EN WS-C2822-A	Modular with 24 switched 10BaseT ports and 1 AUI port	2048	25	2
WS-C2828-EN WS-C2828-A	Modular with 24 switched 10BaseT ports and 1 AUI port	8192	25	2

**Table 1-2 Catalyst 1900 Switch Models**

Part Number	Description	Number of Addresses	Number of Ports
WS-C1924-EN WS-C1924-A	24 10BaseT ports, 1 AUI port, and 2 100BaseTX ports	1024	27
WS-C1924C-EN WS-C1924C-A	24 10BaseT ports, 1 AUI port, 1 100BaseTX port, and 1 100BaseFX port	1024	27
WS-C1912-EN WS-C1912-A	12 10BaseT ports, 1 AUI port, and 2 100BaseTX ports	1024	15
WS-C1912C-EN WS-C1912C-A	12 10BaseT ports, 1 AUI port, 1 100BaseTX port, and 1 100BaseFX port	1024	15

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**Note** Dash A (-A) models are switches with the standard edition software. Dash EN (-EN) models are switches with the standard and Enterprise Edition software.

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## Supported Software Features

Catalyst 2820 and Catalyst 1900 software features include these components:

- VLANs

VLANs allow you to control traffic flow by grouping end stations into administratively defined broadcast domains.

- Cisco Group Management Protocol (CGMP)

A router supporting Internet Protocol (IP) multicasting can use CGMP to distribute membership information of each IP multicast group to switches. As a result, CGMP-capable switches can automatically restrict the forwarding of IP multicast packets to only those ports belonging to a specific multicast group.

- Remote Monitoring (RMON)

RMON is a standard monitoring specification that allows various network monitors and console systems to exchange network monitoring data. Catalyst 2820 and 1900 switches support four RMON groups as defined by RFC 1757.

## VLANs

A VLAN on a Catalyst 2820 or Catalyst 1900 switch is essentially an administratively defined broadcast domain. Stations can receive only packets sent by other stations in the same VLAN. A VLAN enhances performance by limiting traffic; it allows the transmission of traffic among stations that belong to it and blocks traffic from other stations in other VLANs. The Enterprise Edition software allows you to configure from 1 to 1005 VLANs.

## Supported Software Features

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The VLAN feature consists of the following components:

VLAN Trunks	Allow you to extend VLANs from one Catalyst 2820 or Catalyst 1900 switch to routers and switches that are VLAN-capable. The Catalyst 2820 and Catalyst 1900 switches support a maximum of two trunks. The Catalyst 1900 switch supports a maximum of two Fast Ethernet Inter-Switch Link (ISL) trunks. The Catalyst 2820 switch supports both ISL and Asynchronous Transfer Mode (ATM) LAN emulation (LANE) trunk connections.
Load Sharing	Allows parallel trunks to split traffic on a VLAN-by-VLAN basis between multiple trunks.
VLAN Trunk Protocol	Allows VLAN naming consistency and connectivity between all devices in a management domain. When new VLANs are added to a Catalyst 2820 or Catalyst 1900 switch in a management domain, the VLAN Trunk Protocol (VTP) automatically distributes the information to all the devices in the management domain. VTP advertisements are transmitted on all trunk connections, including ISL, IEEE 802.10, and ATM LANE.

VTP Pruning	Enhances network bandwidth use by reducing unnecessary flooded traffic, including broadcast, multicast, and flooded unicast packets. This feature restricts flooded traffic to only those trunk links that the traffic must use to access the appropriate network devices.
Static Port VLAN Membership	You can assign a port to a VLAN. You need to reconfigure the switch to change the VLAN assignment to a static port.
Dynamic Port VLAN Membership	Provides the flexibility to move a connection from a port on one switch to a port on another device in the network while retaining the VLAN identity of the host. You can assign dynamic ports to a VLAN based on the source MAC address of the hosts connected to that port.

## Cisco Group Management Protocol

Cisco Group Management Protocol (CGMP) manages multicast traffic in Catalyst 2820 and Catalyst 1900 switches by allowing directed switching of IP multicast traffic within a network. IP multicast packets are forwarded only to ports with a host configured to receive each multicast address. As a result, ports on hosts whose users are not interested in receiving IP multicast traffic are not flooded with unnecessary traffic.

## RMON Support

Remote Monitoring (RMON) allows various network monitors and console systems to exchange network monitoring data.

## Feature Default Values

Table 1-3 shows the default values for Enterprise Edition software features and the menus you access to reconfigure them.

**Table 1-3 Default Settings and Their Management Menus**

<b>Feature</b>	<b>Default Setting</b>	<b>Management Console Menu</b>
VLANs	VLAN 1 is the default Ethernet VLAN. All ports are nontrunk, static ports and belong to VLAN 1.	Virtual LAN
CGMP	Enabled	Network Management
RMON	Enabled  Default rows set up for ports A and B in the statistics group.  Default rows set up for ports A and B in the short-term history group.  Default rows set up for ports A and B in the long-term history group.	Not displayed

## Management Console

The management console is a menu-driven system using the following conventions:

- Select a menu by entering the letter in square brackets that precedes the selection. The selected menu is displayed immediately.
- Press **Return** after entering any parameters. When pressed at the beginning of a parameter entry, **Return** cancels the attempt, and the menu redisplay.
- Use the **Backspace** key to erase the character previously entered. When pressed at the beginning of a parameter entry, **Backspace** causes the entry to be cleared.
- Enter an **X** to return to the previous menu. Enter an **X** at the Main Menu to exit the management console and return to the command prompt.

- Menus display the current values used by the switch, except when parameters are activated as a group.
- Menu entries are not case sensitive, except when entered as a descriptive string that preserves case.

## Main Menu

This section shows the Management Console Main Menu. Press the **H** key to display the online help and to change the expertise level for online prompts. Press the **X** key to return to the Logon Security Menu.

Catalyst 1900 - Main Menu

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[C] Console Settings
[S] System
[N] Network Management
[P] Port Configuration
[A] Port Addressing
[D] Port Statistics Detail
[M] Monitoring
[V] Virtual LAN
[R] Multicast Registration
[F] Firmware
[I] RS-232 Interface
[U] Usage Summaries
[H] Help

[X] Exit Management Console
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You will work mostly with options **N** and **V** to configure the Enterprise Edition software. When configuring modules, you will also use option **P**.

# Supported MIBS

The Catalyst 2820 and Catalyst 1900 switches support the following Management Information Bases (MIBs):

- RFC 1155-1157 (SNMP v1)
- RFC 1213 (MIB II)
- RFC 1493 (Bridge MIB)
- RFC 1512 (FDDI MIB)
- RFC 1573 (Interfaces MIB)
- RFC 1757 (RMON MIB)
- CISCO-CDP-MIB
- CISCO-VTP-MIB
- CISCO-VLAN-MEMBERSHIP MIB
- Device-specific MIB for the Catalyst 2820 and Catalyst 1900 switches
- Device-specific MIB for the Catalyst 2820 modules
- RFC 1695 (ATM MIB)
- LAN-EMULATION-CLIENT-MIB