

# Introduction

---

Cisco IOS Release 11.2(8)SA6 supports the Catalyst 2900 series XL and the Catalyst 3500 series XL switches. These workgroup Ethernet switches can connect to 10/100 Ethernet, Gigabit Ethernet, and Asynchronous Transfer Mode (ATM) devices as backbone switches, or they can be used in mixed configurations that connect hubs, servers, and desktops.

Switches with this IOS release are available in a standard edition or with Enterprise Edition Software. This guide describes the features that are common to both versions. The *IOS Desktop Switching Enterprise Edition Software Configuration Guide* describes those features that are only in the Enterprise Edition Software.

You can upgrade your switch to Enterprise Edition Software by downloading a new image from Cisco Connection Online. Table 1-1 lists the switches that support IOS Release 11.2(8)SA6.

## Summary of Key Features

This section describes the key features of IOS Release 11.2(8)SA6. Table 3-1 in Chapter 3, “Managing Your Switches,” lists each of these features with its default setting and a cross-reference to the section describing it. The following are the key features of this IOS release:

- Automatic discovery and creation of *clusters* of up to 16 switches that can be managed through a single IP address. Cluster support includes:
  - Unified management and authentication of clustered switches
  - HTML, IOS command-line interface (CLI), and Simple Network Management Protocol (SNMP) management interfaces for cluster, switch, and port management
  - Web-based tools to upgrade all the cluster switches

## Supported Hardware

---

- Support for between 64 and 250 virtual LANs (VLANs), depending on the model.
- IEEE 802.1D Spanning-Tree Protocol (STP) support on a per-VLAN basis
- Network Time Protocol (NTP) to provide an external source for time-of-day information
- Fast- and Gigabit-EtherChannel support for high-speed connections between switches and servers.
- Autonegotiation of speed and half- or full-duplex operation on 10/100 ports.
- Cisco Group Management Protocol (CGMP) to limit the flooding of IP multicast traffic.

The following Enterprise Edition Software features are documented in the *Cisco IOS Desktop Switching Enterprise Edition Software Configuration Guide*:

- Inter-Switch Link (ISL) and IEEE 802.1Q trunking support on all ports.
- VLAN Membership Policy Server (VMPS) for dynamic VLAN membership
- Terminal Access Controller Access Control System Plus (TACACS+) to manage network security via a server.
- STP UplinkFast to accelerate the reconfiguration of STP.

## Supported Hardware

When switches are grouped into clusters, one switch is the *command switch*, and the other switches are *member switches*. The IP address for the entire cluster is assigned to the command switch, and it distributes configuration information to the other switches. Table 1-1 and Table 1-2 describes each switch supported by this release and shows those switches that can act as command switches.

---

**Note** The switches listed in Table 1-2 are supported by the Enterprise Edition Software for 4-MB switches. This standard edition software release supports cluster membership, but does not include the other Enterprise Edition Software features. Switches running this release cannot be command switches.

---

**Table 1-1 Catalyst 2900 Series XL and Catalyst 3500 Series XL Switches**

| <b>Model</b>                      | <b>Description</b>                                       | <b>IOS Release 11.2(8)SA6 (-A)</b> | <b>IOS Release 11.2(8)SA6 (-EN)</b> | <b>Command Capable?</b> |
|-----------------------------------|--|------------------------------------|-------------------------------------|-------------------------|
| WS-C3524-XL-EN<br>WS-C3524-XL-A   | 24 autosensing 10/100 ports and 2 Gigabit Ethernet ports | Yes                                | Yes                                 | Yes                     |
| WS-C3512-XL-EN<br>WS-C3512-XL-A   | 12 autosensing 10/100 ports and 2 Gigabit Ethernet ports | Yes                                | Yes                                 | Yes                     |
| WS-C3508G-XL-A<br>WS-C3508G-XL-EN | 8 Gigabit Ethernet ports                                 | Yes                                | Yes                                 | Yes                     |
| WS-C2912-XL-A<br>WS-C2912-XL-EN   | 12 autosensing 10/100 ports                              | Yes                                | Yes                                 | With upgrade            |
| WS-C2924M-XL-A<br>WS-C2924M-XL-EN | 24 autosensing 10/100 ports and 2 expansion slots        | Yes                                | Yes                                 | With upgrade            |
| WS-C2924-XL-A<br>WS-C2924-XL-EN   | 24 autosensing 10/100 ports                              | Yes                                | Yes                                 | With upgrade            |
| WS-C2924C-XL-A<br>WS-C2924C-XL-EN | 22 autosensing 10/100 ports and 2 100BaseFX ports        | Yes                                | Yes                                 | With upgrade            |
| WS-C2912MF-XL                     | 12 100BaseFX ports and 2 expansion slots                 | No                                 | Yes                                 | With upgrade            |

**Table 1-2 Catalyst 2900 Series XL Switches with 4 MB of Memory**

| <b>Model</b> | <b>Description</b>                                | <b>IOS Release 11.2(8)SA6 (-A)</b> | <b>Enterprise Edition Software for 4 MB switches</b> | <b>Command Capable?</b> |
|--------------|---|------------------------------------|--|-------------------------|
| WS-C2908-XL  | 8 autosensing 10/100 ports                        | No                                 | Yes  | No                      |
| WS-C2924-XL  | 24 autosensing 10/100 ports                       | No                                 | Yes  | No                      |
| WS-C2924C-XL | 22 autosensing 10/100 ports and 2 100BaseFX ports | No                                 | Yes  | No                      |
| WS-C2916M-XL | 16 autosensing 10/100 ports and 2 expansion slots | No                                 | Yes  | No                      |

# Management Options

IOS Release 11.2(8)SA6 supports these management interfaces:

- HTML (web-based) interfaces
- IOS CLI
- SNMP

## HTML Interfaces

Embedded HTML-based management tools display live images of switches and graphical user interfaces.

Depending on your task, you can monitor and configure the supported switches by using the following HTML interfaces:

- Cisco Visual Switch Manager (CVSM) for managing a switch
- Cisco Switch Network View for managing a stack of switches
- Cisco Cluster Management for managing a cluster of switches

## IOS Command-Line Interface

You can access the IOS CLI by connecting a PC or terminal to the console port on the switch rear panel or by using Telnet. Chapter 2, “Using the Management Interfaces,” describes how to use IOS, and Chapter 3, “Managing Your Switches,” and Chapter 4, “Managing Clusters of Switches,” describe the commands to use for specific configuration tasks.

## SNMP Network Management Platforms

You can manage switches by using an SNMP-compatible management station running such platforms as HP OpenView or SunNet Manager. In a cluster configuration, the command switch manages communication between the SNMP management station and all switches in the cluster. The switch supports a comprehensive set of MIB extensions and MIB II, the IEEE 802.1D bridge MIB, and four Remote Monitoring (RMON) groups.

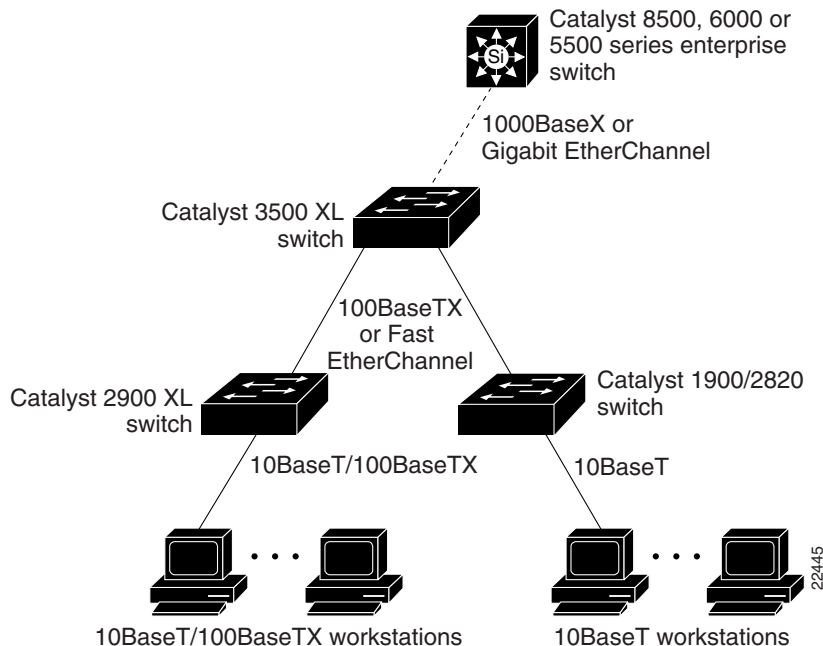
## Deployment Examples

This section describes how you can use IOS Release 11.2(8)SA6 with the Catalyst 3500 series XL and Catalyst 2900 series XL series switches.

### Wiring Closet Aggregation

The cluster-management capabilities of IOS Release 11.2(8)SA6 and the Gigabit Ethernet capabilities of the Catalyst 3500 XL switches can aggregate traffic for Cisco routers or Layer 3 switches. The 10/100 capabilities of the Catalyst 2900 series XL deliver high-speed connections to desktops and servers. Figure 1-1 shows such a configuration.

**Figure 1-1** Wiring Closet Aggregation



## Workgroup Connectivity

Figure 1-2 shows IOS Release 11.2(8)SA6 supporting Catalyst 2900 XL and Catalyst 3500 XL switches in a desktop environment.

**Figure 1-2 Workgroup Connectivity**

