



Release Notes for Catalyst 2900 Series XL ATM Modules

March 20, 2000

These release notes describe the caveats for the Catalyst 2900 series XL Asynchronous Transfer Mode (ATM) modules.

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Introduction

The ATM modules work with modular Catalyst 2900 XL switches that use firmware version 11.2(8)SA5 or above. You can check the installed firmware version by using the switch firmware. For firmware upgrade procedures, refer to the *Cisco IOS Desktop Switching Software Configuration Guide*. You can access this document on Cisco Connection Online (CCO).


Note

The Catalyst 2900 series XL ATM modules can be installed only in a Catalyst 2900 series switch.

Cisco IOS Release 12.1(1)

Use the switch firmware or the Visual Switch Manager (VSM) to install the IOS Release 12.1(1) Flash image for the ATM modules. See the “Upgrading the Module Software” section on page 6.

Installation Notes

You must tighten the screws after inserting the module in the switch.


Warning

Tighten screws to activate.

Waarschuwing **Schroeven aandraaien om te activeren.**

Varoitus **Aktivoi kiristämällä ruuvit.**

Attention **Pour activer : serrez les vis.**

Warnung **Schrauben anziehen für Aktivierung.**

Avvertenza **Per attivare: stringere la vite.**

Advarsel **Stram skruene for å aktivere.**

Aviso **Aperte os parafusos para ativar.**

¡Advertencia! **Para activar, apriete los tornillos.**

Varning! **Aktivera genom att dra åt skruvarna**

使用するにはネジを締めてください。

Important Notes

Hot Swapping

Hot swapping is not supported in this release. When inserting a module in or removing a module from a switch, power off the switch. If you insert or remove a module while the switch is powered on, restart the switch by using the **reload** command. If you upgrade the IOS Flash image on the ATM module from the switch command-line interface (CLI), restart the switch by entering the **reload** command.

Unsupported IOS Commands

The IOS **ping** and **traceroute** commands are not supported.

New and Changed Information

New Features in Release 12.0(7)XF

The following features are supported on the ATM modules:

- Multiprotocol over ATM (MPOA) client for emulated LANs (ELANs).
MPOA provides a standards-based Layer 3 switching solution for ATM networks. MPOA enables the fast routing of internetwork-layer packets across a nonbroadcast multiaccess (NBMA) network.
- Fast Simple Server Redundancy Protocol (FSSRP) for LAN emulation (LANE).
FSSRP provides an immediate backup for a LANE server and LANE broadcast-and-unknown server (BUS). You must enter the **lane config fssrp** command on all LANE configuration servers (LECSs) to enable FSSRP operation.
- Autodiscovery of MPOA servers (MPSs).
- Retry mechanism support for establishing shortcut switched virtual connections (SVCs).
- All SVCs use unspecified bit rate (UBR) or best-effort Traffic Descriptor and unspecified class of service.
- Supports convergence onto one virtual circuit channel (VCC) from duplicate VCCs.

New Features in Release 12.0(5)

The following features are supported on the ATM modules:

- Multiple virtual LANs (using the Enterprise Edition Software IOS Release 11.2(8)SA5 or later)
Each ATM trunk supports a maximum of 64 active virtual LANs (VLANs) at one time. For IOS Release 12.0(5)XP or earlier, you *must* use the Enterprise Edition Software to configure multiple VLANs. If you use the standard edition software, you can only configure one VLAN.

- Emulated LAN support

The ATM module supports multiple ELANs. You can logically group users on Ethernet and ATM networks by mapping VLANs on the Ethernet network to ELANs on the ATM network.

- RFC-1483 PVC support

The ATM modules support multiple VLAN mappings for RFC-1483 logical-link control (LLC) encapsulation for bridged Ethernet (IEEE 802.3). With RFC 1483, you can transport Ethernet frames over a maximum of 1024 permanent virtual connections (PVCs).

- Supported IOS commands

- Catalyst ATM modules-specific commands

The following ATM modules-specific commands are supported:

Command	Description	Type	Mode
atm bind	Binds a PVC to or from a VLAN.	IOS/ATM	Interface configuration
atm pvc	Enables encapsulation type AAL5 SNAP for RFC-1483 support.	IOS/ATM	Interface configuration
show atm vlan	Shows the relationship between the VLAN and the PVCs.	IOS/ATM	Interface configuration

- IOS commands

For a complete list of supported IOS commands, see the *Catalyst 2900 Series XL ATM Installation and Configuration Guide*.

- Support for Catalyst 2900 series IOS Release 11.2(8)SA5 or later

Caveats

This section contains a list of known problems and suggested workarounds.

Multiple MPCs

You can configure multiple MPCs on a single ATM module and bind them to the interface. Doing this might give you unreliable data. To work around this problem, configure only one MPC for each ATM module.

Static Access Mode

If a LEC is attached to VLAN 2 in static mode, it will not transmit traffic. To work around this problem, attach the LEC to any VLAN other than VLAN 2. If the LEC is attached to VLAN 1, it transmits traffic.

PVCs

If you configure the bandwidth of a PVC for a value below 64 kbps, the ATM module discards frames it receives because the AAL5 reassembly timer has a duration that is too short. To work around this problem, configure PVCs for a bandwidth of 64 kbps or higher.

Commands

Show and Clear Commands

The *ip-addr* parameter does not work with the **show** and **clear** commands.

Exit and Help Commands

The **exit** and **help** commands do not work in interface configuration mode. To exit this mode, use the **end** command or **Control-Z**.

Link State

The ATM module does not send trap information about the link state.

Incompatible Firmware on LANE Server

The LANE clients for the ATM module might not work if the LANE servers have IOS Release 11.2(12.0.2) or later installed. To avoid this problem, make sure the LANE server is running IOS Release 11.2(12.0.2) or later. If the LANE servers are not running the required IOS release, upgrade the firmware.

Upgrading the Module Firmware

If your attempt to upgrade the ATM module firmware fails while the module is in normal operation, the module continues normal operation. However, the module image stored in the Flash memory is corrupted. When you reset the ATM module, it will not find a valid IOS image, and the ATM module will not pass the power-on self-test (POST). To correct this problem, repeat the firmware upgrade procedure to download a new firmware image on the ATM module. See the *Catalyst 2900 Series XL ATM Modules Installation and Configuration Guide*.

Running Configuration

You cannot save your running configuration to a network Trivial File Transfer Protocol (TFTP) server.

Upgrading the Module Software

New ATM module software releases can be downloaded from CCO, the Cisco Systems customer web site.

Downloading Files from CCO

Follow these steps to download the new software and TFTP server application:

-
- Step 1** Display the Cisco home page by pointing your browser to one of the following URLs:
- <http://www.cisco.com>
 - <http://www-china.cisco.com>
 - <http://www-europe.cisco.com>
- Step 2** Log into CCO. You might need to register the first time you log in.
- Step 3** To locate the software files from the home page, access the FTP site at `/ftp://dsbu/MPOA`.
- Step 4** Follow the instructions on the page to download the IOS image.
- Step 5** Follow the instructions on the page to download and configure the TFTP server.
-

Displaying the IP Address of the TFTP Server

Before you can download new software to your module, you need to enter the IP address of your PC or workstation on the System Management page. If you are running the Cisco TFTP server, the PC IP address is displayed on the application title bar.

If you do not know the IP address, follow one of these steps to display it:

- For a Windows NT system, enter the command **ipconfig** at the DOS prompt.
- For a Windows 95 or Windows 98 system, select **Start>Run**, and enter **winipcfg**.
- From a UNIX workstation, enter **ifconfig -a**, or look at the `/etc/hosts` file.

Upgrading the Module Software by Using the CLI

Follow these steps to upgrade the module software:

-
- Step 1** At the switch prompt, change to privileged EXEC mode by entering the **enable** command:
- ```
Switch> enable
```
- Step 2** Enter the switch password, if applicable.
- ```
Password: <password>
Switch#
```

Step 3 Enter the **copy** command to copy the image in slot 1 or slot 2.

```
Switch# copy tftp://server//filename slot1:boot
```

```
Switch# copy tftp://server//filename slot2:boot
```



Note When copying the image, Cisco recommends that you overwrite the old file. This decreases potential problems when you restart the module. When the module restarts, it uses the first image it finds.

Step 4 Restart the switch by entering the **reload** command:

```
Switch# reload
```

Upgrading the Module Software by Using VSM

To upgrade the module software using Visual Switch Manager (VSM), do the following from the VSM System Configuration page:



Note To avoid errors during the upgrade process, close all other VSM pages.

Step 1 In the **Combined Cisco IOS and Visual Switch Manager Upgrade** section, enter the IP address of your TFTP server into the **Server IP Address** or **Name of TFTP Server** field.

Step 2 In the **Cisco ATM Upgrade Filename** field, enter the name of the image file that you downloaded from CCO.

This might be a name like C29atm-m-m-121-1.bin. Do not enter the path.

Step 3 Click **Upgrade ATM Module on Slot 1** or **Upgrade ATM Module on Slot 2**.

The upgrade can take several minutes. The TFTP server window displays a successful message when the upgrade is complete.

Step 4 Click **Reboot System** to restart the switch.

Upgrading Your Catalyst 2900 Series XL Switch Software

This section describes the procedure for upgrading your Catalyst 2900 series XL switch software by using the IOS CLI. If you are running Cisco IOS Release 11.2(8)SA3 or later, we recommend that you upgrade the switch by using the web-based Visual Switch Manager software (VSM). To perform the steps in this section, you must have a TFTP server and a management station (such as a PC) with a CD-ROM drive. You must also access the switch management console by either of these two methods:

- Using a terminal emulation program (such as ProComm or HyperTerminal) and the supplied RJ-45-to-RJ rollover cable and adapters.
- Using Telnet if an IP address is assigned to the switch.

Downloading Files from CCO

Follow these steps to download the new software and TFTP server application:

-
- Step 1** Display the Cisco home page by pointing your browser to one of the following URLs:
- <http://www.cisco.com>
 - <http://www-china.cisco.com>
 - <http://www-europe.cisco.com>
- Step 2** Log into CCO. You might need to register the first time you log in.
- Step 3** To locate the software files from the home page, go to <http://www.cisco.com/cgi-bin/tablebuild.pl/cat2900XL>.
- Step 4** Follow the instructions on the page to download the IOS image.
- Step 5** Follow the instructions on the page to download and configure the TFTP server.
-

Displaying the IP Address of the TFTP Server

Before you can download new software to your module, you need to enter the IP address of your PC or workstation on the System Management page. If you are running the Cisco TFTP server, the PC IP address is displayed on the application title bar.

If you do not know the IP address, follow one of these steps to display it:

- For a Windows NT system, enter the command **ipconfig** at the DOS prompt.
- For a Windows 95 or Windows 98 system, select **Start>Run**, and enter **winipcfg**.
- From a UNIX workstation, enter **ifconfig -a** or look at the `/etc/hosts` file.

Upgrading Switch Software by Using the CLI

You can use the CLI to perform a TFTP transfer of the files to the switch.

The procedure that follows includes the commands to address the following issues:

- To avoid a conflict with users accessing the manager software pages during the software upgrade, delete the existing HTML files and disable access to the HTML pages before you upgrade the software.
- Because the switch Flash memory can hold only one software image file, you need to change the name of the *current* image file to the name of the *new* file you are copying. You then replace the old file with the new file when you copy it into Flash memory.

Follow these steps to upgrade the switch software by using a TFTP transfer:

- Step 1** If your PC or workstation cannot act as a TFTP server, copy the files to a TFTP server to which you have access.
- Step 2** You can access the CLI by starting a Telnet session or by connecting to the console port through the RS-232 connector.
- To start a Telnet session on your PC or workstation, enter the following command:
- ```
server% telnet switch_ip_address
```
- Step 3** Enter privileged EXEC mode:
- ```
switch> enable
switch#
```
- Step 4** Display the name of the current (default) image file. The following example shows the current name in italic:
- ```
switch# show boot
BOOT path-list: flash:current_image
Config file: flash:config.text
Enable Break: 1
Manual Boot: no
```
- Step 5** If there is no file defined in the BOOT path-list, enter **dir flash:** to display the contents of Flash memory. The file named *c2900XL-h-mz\_current\_version* is your current image file.
- Step 6** Rename the current image file to the name of the new image. This does not affect the operation of the switch.
- ```
switch# rename flash:current_image flash:new_image
Source filename [current_image]?
Destination filename [new_image]?
```
- Step 7** Display the contents of Flash memory to verify the renaming of the file:
- ```
switch# dir flash:
Directory of flash:
-rwx 910426 Mar 06 1993 23:47:28 new_image
-rwx 80971 Sep 14 1998 03:10:38 c2900XL-diag-mz-112.0.0.11-SA2
-rwx 4800 Mar 01 1993 00:04:14 html
-rwx 159 Jan 01 1970 00:00:34 env_vars
-rwx 1121 Mar 01 1993 18:46:01 config.text
```
- Step 8** If you are upgrading a WS-C2916M-XL switch, you need to delete the diagnostics file to make room for the new software.



**Note** If you are not upgrading this model, you do not need to delete this file.

The diagnostics file has a name in the following format: *c2900XL-diag-mz-version\_name*. The string *version\_name* depends on the switch and software you are running.

Display the diagnostics file:

```
switch# dir flash:c2900XL-diag-mz*
Directory of flash:
-rwx 80971 Sep 14 1998 03:10:38 c2900XL-diag-mz-112.0.0.11-SA2
```

Delete the diagnostics file:

```
Switch# del flash:c2900XL-diag-mz-112.0.0.11-SA2
Delete filename [c2900XL-diag-mz-112.0.0.11-SA2]?
Delete flash:c2900XL-diag-mz-112.0.0.11-SA2? [confirm]
Switch#
```

**Step 9** Enter terminal configuration mode:

```
switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
```

**Step 10** Disable access to the switch HTML pages:

```
switch(config)# no IP http server
```

**Step 11** Change the name of the default image file:

```
switch(config)# boot system flash:new_image
```

**Step 12** Return to privileged EXEC mode:

```
switch(config)# ^Z
```

**Step 13** Verify that the name of the default image file is correct:

```
switch# show boot
BOOT path-list: flash:new_image
Config file: flash:config.text
Enable Break: 1
Manual Boot: no
HELPER path-list:
NVRAM/Config file
buffer size: 32768
```

**Step 14** Remove the manager software HTML files:

```
switch# del flash:html/*
```

Press **Enter** to confirm the deletion of each file. Do not press any other keys during this process.

**Step 15** If you are running IOS Release 11.2(8)SA3 or later, remove the files in the Snmp directory:

```
switch# del flash:html/Snmp/*
```

Make sure the “S” in “Snmp” is uppercase.

Press the **Enter** key to confirm the deletion of each file. Do not press any other keys during this process.

**Step 16** If you are running IOS Release 11.2(8)SA2 or earlier, create a directory on the switch Flash memory to be used for the HTML files:

```
switch# mkdir flash:html/Snmp
```

Make sure the “S” in “Snmp” is uppercase.

- Step 17** Enter the following command to copy the new software file from the TFTP server to the switch Flash memory:

```
switch# tar /x tftp://server_ip_address//path/filename.tar flash:
Loading /path/filename.tar from server_ip_address (via!)
extracting advanced.gif (2648 bytes)
extracting amber.gif (530 bytes)!
extracting bar.gif (4156 bytes)!
extracting cool.gif (530 bytes)
extracting daytona.gif (1470 bytes)
extracting duplgnd.gif (639 bytes)!
. . .
```

Depending on the TFTP server being used, you might need to enter only one slash (/) after the *server\_ip\_address* in the **tar** command.

- Step 18** Enter terminal configuration **mode**:

```
switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
```

- Step 19** Reenable access to the switch HTTP pages:

```
switch(config)# IP http server
```

- Step 20** Reload the new software with the following command:

```
switch# reload
System configuration has been modified. Save? [yes/no]:y
Proceed with reload? [confirm]
```

- Step 21** Press **Return** to confirm the reload.

Your Telnet session ends when the switch resets.

## Upgrading the Switch Software by Using VSM



### Note

All examples use IOS Release 11.2(8)SA5 in the upgrade procedures for the switch software. However, you can upgrade to IOS Release 11.2(8)SA6, 12.0(5)XP, or 12.0(5)XU as well.

This section describes the procedure for upgrading switch software after you have upgraded to IOS Release 11.2(8)SA5 or above. To upgrade to IOS Release, see the “Upgrading Your Catalyst 2900 Series XL Switch Software” section. To upgrade the WS-C2916M-XL model from IOS Release 11.2(8)SA4 to IOS Release 11.2(8)SA5, you need to use the CLI procedure described in this section.

With IOS Release 11.2(8)SA5 or above, you can upgrade the switch software by using a single file. You can download this file by using the procedure described in “Downloading Files from CCO” section.

Follow these steps to upgrade the switch software by using the combined (tar) file that contains the image and the HTML pages:

---

**Step 1** Open the VSM System Configuration page.



**Note** To avoid errors during the upgrade process, close any other switch VSM pages open.

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**Step 2** In the Combined Cisco IOS and Visual Switch Manager Upgrade section, enter the IP address of your TFTP server in the Server IP Address or Name of TFTP Server field.

**Step 3** In the Cisco IOS and Visual Switch Manager Upgrade Filename field, enter the filename of the combined IOS image and HTML tar file that you downloaded from CCO (such as c2900XL-h-mz-112.8-SA5.tar or c2900XL-hs-mz-112.8-SA5.tar)



**Note** Do not enter the path name. Enter only the filename in this field. You set the path in the TFTP root directory of the TFTP server application.

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**Step 4** Click **Upgrade Cisco IOS and Visual Switch Manager**.

In the VSM software message window that appears, click **OK** to change the old image filename into the new image filename. Changing the filenames enables the old image to be overwritten by the new version. Only enough Flash memory is available for one version.

**Step 5** In the VSM software confirmation window that appears, click **OK** to continue the upgrade process. This can take several minutes.

**Step 6** In the TFTP server window, wait for the successful message to appear.

**Step 7** Reboot the switch.

**Step 8** Reload the VSM page to access the new HTML files.

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## Catalyst 2900 XL Software Caveats

For a list of Catalyst 2900 XL software caveats, refer to the release notes for the version of the software you are using: Release 11.2(8)SA5, Release 11.2(8)SA6, Release 12.0(5)XP, or Release 12.0(5)XU.

## Related Documentation

The product documentation for the Catalyst 2900 series XL modules and the Catalyst 2900 series XL switches is as follows:

- *Catalyst 2900 Series XL Modules Installation Guide*
- *Catalyst 2900 Series XL Installation Guide*
- *Cisco IOS Desktop Switching Software Configuration Guide*
- *Cisco IOS Desktop Switching Enterprise Edition Software Configuration Guide*
- *Cisco IOS Desktop Switching Command Reference* (online only)

- *Quick Start Guide: Catalyst 2900 Series XL Switches*
- *Release Notes for the Catalyst 2900 Series XL Cisco IOS Release 11.2(8)SA5*
- *Release Notes for the Catalyst 2900 Series XL and Catalyst 3500 Series XL Cisco IOS Release 11.2(8)SA6*
- *Release Notes for the Catalyst 2900 Series XL and Catalyst 3500 Series XL Cisco IOS Release 12.0(5)XP*
- *Release Notes for the Catalyst 2900 Series XL and Catalyst 3500 Series XL Cisco IOS Release 12.0(5)XU*

## Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: <http://www.cisco.com>
- WWW: <http://www-europe.cisco.com>
- WWW: <http://www-china.cisco.com>
- Telnet: [cco.cisco.com](http://cco.cisco.com)
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact [cco-help@cisco.com](mailto:cco-help@cisco.com). For additional information, contact [cco-team@cisco.com](mailto:cco-team@cisco.com).



### Note

If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or [tac@cisco.com](mailto:tac@cisco.com). To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or [cs-rep@cisco.com](mailto:cs-rep@cisco.com).

# Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more current than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

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This document is to be used in conjunction with the documents listed in the "Related Documentation" section.

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