



# Release Notes for Catalyst 2900 Series XL ATM Modules, Cisco IOS Release 12.1(16)

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**September 2002**

Cisco IOS Release 12.1(16) runs on Catalyst 2900 series XL Asynchronous Transfer Mode (ATM) modules.



**Note**

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Only ATM modules with 4 or 8 MB of Flash memory support Release 12.1(16).

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These release notes include important information about this IOS release and any limitations, restrictions, and caveats that apply to it. For the complete list of Catalyst 2900 XL switch documentation, see the [“Related Documentation” section on page 8](#).

## Contents

These release notes contain these topics:

- [“Hardware Requirements” section on page 2](#)
- [“Upgrading the Module Software” section on page 2](#)
- [“Documentation Notes” section on page 4](#)
- [“Installation Notes” section on page 4](#)
- [“Limitations and Restrictions” section on page 5](#)
- [“Important Notes” section on page 5](#)
- [“Unresolved Caveats” section on page 7](#)
- [“Resolved Caveats” section on page 7](#)
- [“Related Documentation” section on page 8](#)
- [“Obtaining Documentation” section on page 9](#)
- [“Obtaining Technical Assistance” section on page 10](#)



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## Hardware Requirements

The ATM modules work with modular Catalyst 2900 XL switches that use firmware version 11.2(8)SA5 or later. You can check the installed firmware version by using the **show version** privileged EXEC command on the switch. For firmware upgrade procedures, refer to the switch software configuration guide. You can access this document on Cisco.com.

**Note**

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

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## Upgrading the Module Software

You can download new ATM module software releases from Cisco.com.

## Downloading Files from Cisco.com

Follow these steps to download the new software and, if necessary, the Trivial File Transfer Protocol (TFTP) server application from Cisco.com to your management station:

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- Step 1** Display the Cisco home page from one of these URLs:
- <http://www.cisco.com>
  - <http://www-china.cisco.com>
  - <http://www-europe.cisco.com>
- Step 2** Log into Cisco.com. You might need to register the first time you log in.
- Step 3** Download the file from this location:
- <http://www.cisco.com/kobayashi/sw-center/lan/cat2900XL-planner.shtml>.
- Step 4** Use the command-line interface (CLI) or the web-based interface to perform a TFTP transfer of the file or files to the switch after you have downloaded the correct files to your PC or workstation.
- The readme.txt file describes how to download the TFTP server application. New features provided by the software are not available until you reload the software.
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## 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 using 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, we recommend 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 by using Visual Switch Manager (VSM), follow these steps on 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 in 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 Cisco.com.

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 message when the upgrade is complete.

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

# 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。

## Documentation Notes

The *Catalyst 2900 Series XL ATM Modules Installation and Configuration Guide* states the incorrect encapsulation type in Step 4, Chapter 3, “Configuration Example for an RFC-1483 PVC.” This is the corrected text for Step 4.

**Step 4** Create PVCs for RFC 1483 by entering the **atm pvc** command:

```
atm(config-if)# atm pvc 100 0 100 aa15snap 20000 20000 32
atm(config-if)# atm pvc 101 0 101 aa15snap
atm(config-if)# atm pvc 200 0 200 aa15snap
```

The online document contains the corrected procedure.

## Limitations and Restrictions

You should review this section before you begin working with the switches and ATM modules. Some features might not work as documented, and some features could be affected by recent changes to the switch hardware or software.

- Only ATM modules with 4 or 8 MB of Flash memory support Release 12.1(16).
- When inserting a module in or removing a module from a switch, power off the switch. If you upgrade the IOS Flash image on the ATM module from the switch CLI, restart the switch by entering the **reload** command.
- The IOS **ping** and **traceroute** commands are not supported.
- You can configure multiple Multiprotocol over ATM (MPOA) clients on a single ATM module and bind them to the interface. Doing this might give you unreliable data. Configure only one MPOA client for each ATM module.
- If you configure the bandwidth of a permanent virtual connection (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. Configure PVCs for a bandwidth of 64 kbps or higher.
- The ATM module does not send trap information about the link state.
- The LAN emulation (LANE) clients for the ATM module might not work if the LANE servers have IOS Release 11.2(12.0.1) or earlier 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.
- 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.
- You cannot save the ATM module's running configuration to a network TFTP server.

## Important Notes

This section provides information related to these releases:

- [“Release 12.1\(16\)” section on page 5](#)
- [“Release 12.1\(4\)” section on page 6](#)
- [“Release 12.0\(7\)XF” section on page 6](#)
- [“Release 12.0\(5\)” section on page 6](#)

## Release 12.1(16)

**Note**

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Only ATM modules with 4 or 8 MB of Flash memory support Release 12.1(16).

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## Release 12.1(4)

**Note**

To ensure that Simple Network Management Protocol (SNMP) status is working correctly, be sure that Release 12.0(5.2)XU or later is loaded on your Catalyst 2900 XL switch.

## Release 12.0(7)XF

These features are supported on the ATM modules:

- 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 LANE.  
FSSRP provides an immediate backup for a LANE server and a 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 for establishing shortcut SVCs.
- All SVCs use UBR or best-effort Traffic Descriptor and an unspecified class of service.
- Convergence onto one virtual circuit channel (VCC) from duplicate VCCs.

## Release 12.0(5)

These 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 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 LANs (ELANs)  
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  
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 PVCs.

## Unresolved Caveats

These are unresolved caveats in Release 12.1(16):

- CSCdw64539

Under heavy traffic load, the ATM module might freeze and restart itself.

There is no workaround for this.

- CSCdx89966

The **show atm interface atm** privileged EXEC command periodically displays incorrect output for an ATM module configured for LAN emulation (LANE). Specifically, incorrect values can appear for the transmit load (txload) and the 5-minute output rate counters. This condition corrects itself after an undetermined amount of time. The erroneous information does not affect the operation of the ATM module and switch.

There is no workaround.

## Resolved Caveats

These caveats are resolved in Release 12.1(16):

- CSCdu28774

The ATM module now continues to send data in permanent virtual connections (PVCs).

- CSCdv68687

The ATM module no longer stop operating after you remove a PVC statement from the configuration file.

- CSCdx15422

The Operation, Administration, and Maintenance (OAM) feature now detects connectivity between two PVCs over an ATM cloud after connectivity is lost and then re-established.

## Related Documentation

These documents provide complete information about the switch and are available from this Cisco.com site:

<http://www.cisco.com/univercd/cc/td/doc/product/lan/c2900xl/index.htm>

You can order printed copies of documents with a DOC-xxxxxx= number from the Cisco.com sites and from the telephone numbers listed in the “[Ordering Documentation](#)” section on page 9.

- *Catalyst 2900 Series XL and Catalyst 3500 Series XL Software Configuration Guide* (order number DOC-786511=)
- *Catalyst 2900 Series XL and Catalyst 3500 Series XL Command Reference* (order number DOC-7812155=)
- Cluster Management Suite (CMS) online help (available only from the switch CMS software)
- *Catalyst 2900 Series XL Hardware Installation Guide* (order number DOC-786461=)
- *Catalyst 3500 Series XL Hardware Installation Guide* (order number DOC-786456=)
- *Catalyst 2900 Series XL Modules Installation Guide* (order number DOC-CAT2900-IG=)
- *Catalyst 2900 Series XL ATM Modules Installation and Configuration Guide* (order number DOC-785472=)
- *1000BASE-T Gigabit Interface Converter Installation Note* (not orderable but is available on Cisco.com)
- *Catalyst GigaStack Gigabit Interface Converter Hardware Installation Guide* (order number DOC-786460=)
- *Installation Note for the CWDM Passive Optical System* (not orderable but is available on Cisco.com)

# Obtaining Documentation

These sections explain how to obtain documentation from Cisco Systems.

## World Wide Web

You can access the most current Cisco documentation on the World Wide Web at this URL:

<http://www.cisco.com>

Translated documentation is available at this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

## Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

## Ordering Documentation

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:  
[http://www.cisco.com/cgi-bin/order/order\\_root.pl](http://www.cisco.com/cgi-bin/order/order_root.pl)
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:  
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

## Documentation Feedback

You can submit comments electronically on Cisco.com. In the Cisco Documentation home page, click the **Fax** or **Email** option in the “Leave Feedback” section at the bottom of the page.

You can e-mail your comments to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

You can submit your comments by mail by using the response card behind the front cover of your document or by writing to the following address:

Cisco Systems  
Attn: Document Resource Connection  
170 West Tasman Drive  
San Jose, CA 95134-9883

We appreciate your comments.

# Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

## Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

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- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

If you want to obtain customized information and service, you can self-register on Cisco.com. To access Cisco.com, go to this URL:

<http://www.cisco.com>

## Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Cisco TAC inquiries are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

The Cisco TAC resource that you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

## Cisco TAC Web Site

You can use the Cisco TAC Web Site to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to this URL:

<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

<http://www.cisco.com/register/>

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC Web Site, you can open a case online by using the TAC Case Open tool at this URL:

<http://www.cisco.com/tac/caseopen>

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC Web Site.

## Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

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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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