



# Release Notes for Cisco 7000 Family for Cisco IOS Release 12.3 YU

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August 8, 2007

Cisco IOS Release 12.3(14)YU1

OL-8068-02

These release notes for the Cisco 7000 family describe the enhancements provided in Cisco IOS Release 12.3(14)YU1. These release notes are updated as needed.

For a list of the software caveats that apply to Cisco IOS Release 12.3(14)YU1, see the [“Caveats for Cisco IOS Release 12.3 YU” section on page 6](#) and *Caveats for Cisco IOS Release 12.3*. The caveats document is updated for every maintenance release and is located on Cisco.com and the Documentation CD-ROM.

Use these release notes with *Cross-Platform Release Notes for Cisco IOS Release 12.3* located on Cisco.com and the Documentation CD-ROM.

## Contents

These release notes describe the following topics:

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# System Requirements

This section describes the system requirements for Cisco IOS Release 12.3(14)YU1 and includes the following sections:

- [Memory Recommendations, page 2](#)
- [Supported Hardware, page 2](#)
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## Memory Recommendations

**Table 1** *Memory Recommendations for the Cisco IOS Release 12.3 YU*

Platforms	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
Cisco 7200 Series	c7200-g8ik8s-mz	64 MB	512 MB	RAM
	c7200-g8ik9s-mz	64 MB	512 MB	RAM
	c7200-g8is-mz	64 MB	512 MB	RAM

## Supported Hardware

Cisco IOS Release 12.3(14)YU1 supports the following Cisco 7000 platform:

- Cisco 7200 series routers

For detailed descriptions of the new hardware features, see the [“New and Changed Information” section on page 5](#).

## Determining the Software Version

To determine the version of Cisco IOS software running on your Cisco 7000 family router, log in to the Cisco 7000 family router and enter the **show version EXEC** command. The following sample **show version** command output is from a router running a Cisco 7200 series software image with Cisco IOS Release 12.3(14)YU1:

```
Router> show version
Cisco IOS Software, 7301 Software (c7200-g8ik8s-mz), Version 12.3(14)YU1, RELEASE
SOFTWARE (fc1)
```

## Upgrading to a New Software Release

For general information about upgrading to a new software release, refer to *Upgrading the Cisco IOS Software Release in Cisco Routers and Modems* located at:

<http://www.cisco.com/warp/public/732/>

## Feature Support

Cisco IOS software is packaged in feature sets that consist of software images that support specific platforms. The feature sets available for a specific platform depend on which Cisco IOS software images are included in a release. Each feature set contains a specific set of Cisco IOS features.



### Caution

Cisco IOS images with strong encryption (including, but not limited to 168-bit (3DES) data encryption feature sets) are subject to U.S. government export controls and have limited distribution. Strong encryption images to be installed outside the United States are likely to require an export license. Customer orders may be denied or subject to delay because of U.S. government regulations. When applicable, the purchaser/user must obtain local import and use authorizations for all encryption strengths. Please contact your sales representative or distributor for more information, or send an e-mail to [export@cisco.com](mailto:export@cisco.com).

The feature set tables have been removed from the Cisco IOS Release 12.3 release notes to improve the usability of the release notes documentation. The feature-to-image mapping that was provided by the feature set tables is available through Cisco Feature Navigator.

Cisco Feature Navigator is a web-based tool that enables you to determine which Cisco IOS software images support a specific set of features and which features are supported in a specific Cisco IOS image. You can search by feature or by feature set (software image). Under the release section, you can compare Cisco IOS software releases side by side to display both the features unique to each software release and the features that the releases have in common.

To access Cisco Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to [cco-locksmith@cisco.com](mailto:cco-locksmith@cisco.com). An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at this URL:

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

Cisco Feature Navigator is updated regularly when major Cisco IOS software releases and technology releases occur. For the most current information, go to the Cisco Feature Navigator home page at the following URL:

<http://www.cisco.com/go/fn>

For frequently asked questions about Cisco Feature Navigator, see the FAQs at the following URL:

<http://www.cisco.com/support/FeatureNav/FNFAQ.html>

### Determining Which Software Images (Feature Sets) Support a Specific Feature

To determine which software images (feature sets) in Cisco IOS Release 12.3 support a specific feature, go to the Cisco Feature Navigator home page, enter your Cisco.com login, and perform the following steps:

- 
- Step 1** From the Cisco Feature Navigator home page, click **Feature**.
  - Step 2** To find a feature, use either “Search by full or partial feature name” or “Browse features in alphabetical order.” Either a list of features that match the search criteria or a list of features that begin with the number or letter selected from the ordered list will be displayed in the text box on the left side of the web page.
  - Step 3** Select a feature from the left text box, and click the **Add** button to add a feature to the Selected Features text box on the right side of the web page.




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**Note** To learn more about a feature in the list, click the **Description** button below the left box.

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Repeat this step to add additional features. A maximum of 20 features can be chosen for a single search.

- Step 4** Click **Continue** when you are finished selecting features.
  - Step 5** From the Major Release drop-down menu, choose **12.3**.
  - Step 6** From the Release drop-down menu, choose the appropriate maintenance release.
  - Step 7** From the Platform Family drop-down menu, select the appropriate hardware platform. The “Your selections are supported by the following:” table will list all the software images (feature sets) that support the feature(s) that you selected.
- 

### Determining Which Features Are Supported in a Specific Software Image (Feature Set)

To determine which features are supported in a specific software image (feature set) in Cisco IOS Release 12.3, go to the Cisco Feature Navigator home page, enter your Cisco.com login, and perform the following steps:

- 
- Step 1** From the Cisco Feature Navigator home page, click **Compare/Release**.
  - Step 2** In the “Find the features in a specific Cisco IOS release, using one of the following methods:” box, choose **12.3** from the Cisco IOS Major Release drop-down menu.
  - Step 3** Click **Continue**.
  - Step 4** From the Release drop-down menu, choose the appropriate maintenance release.
  - Step 5** From the Platform Family drop-down menu, choose the appropriate hardware platform.
  - Step 6** From the Feature Set drop-down menu, choose the appropriate feature set. The “Your selections are supported by the following:” table will list all the features that are supported by the feature set (software image) that you selected.
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# New and Changed Information

The following sections list the new hardware and software features supported by the Cisco 7000 family of routers for Cisco IOS Release 12.3 YU:

## New Hardware Features in Cisco IOS Release 12.3(14)YU1

There are no new hardware features supported in Cisco IOS Release 12.3(14)YU1.

## New Software Features in Cisco IOS Release 12.3(14)YU1

There are no new software features supported in Cisco IOS Release 12.3(14)YU1.

## New Hardware Features in Cisco IOS Release 12.3(14)YU

There are no new hardware features supported in Cisco IOS Release 12.3(14)YU.

## New Software Features in Cisco IOS Release 12.3(14)YU

The following new software features are supported by the Cisco IOS Release 12.3(14)YU:

- Enhanced Virtual APN (service-aware APN)
- High Speed Downlink Data Packet Access (HSDPA) support and associated 3GPP R5
- NPE-G1 support (Cisco GGSN Release 5.0 and later, Cisco 7200 platform)
- Support for new information elements (IEs) sent from the SGSN (user location, radio access technology (RAT), MS time zone, Customized Application for Mobile Enhanced Logic (CAMEL) charging information, and user location information IEs)

For more information on the features in GGSN Release 6.0, see the Cisco IOS Release 12.3(14)YU Cisco GGSN Release 6.0 configuration guide and command reference at:

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123newft/123limit/123y/123yu14/index.htm>

## MIBs

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:

<http://tools.cisco.com/ITDIT/MIBS/servlet/index>

If Cisco MIB Locator does not support the MIB information that you need, you can also obtain a list of supported MIBs and download MIBs from the Cisco MIBs page at the following URL:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

To access Cisco MIB Locator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to [cco-locksmith@cisco.com](mailto:cco-locksmith@cisco.com). An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at this URL:

<http://tools.cisco.com/RPF/register/register.do>

## Caveats for Cisco IOS Release 12.3 YU

Caveats describe unexpected behavior in Cisco IOS software releases. Severity 1 caveats are the most serious caveats; severity 2 caveats are less serious. Severity 3 caveats are moderate caveats, and only select severity 3 caveats are included in the caveats document.

This section contains only open and resolved caveats for the current Cisco IOS maintenance release.

All caveats in Cisco IOS Release 12.3 and Cisco IOS Release 12.3 T are also in Cisco IOS Release 12.3(14)YU1.

For information on caveats in Cisco IOS Release 12.3, see *Caveats for Cisco IOS Release 12.3*.

For information on caveats in Cisco IOS Release 12.3 T, see *Caveats for Cisco IOS Release 12.3 T*, which lists severity 1 and 2 caveats and select severity 3 caveats and is located on Cisco.com and the Documentation CD-ROM.



**Note**

If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any release. To reach Bug Navigator II, **log in** to Cisco.com and click **Service and Support: Technical Assistance Center: Select & Download Software: Jump to a software resource: Software Bug Toolkit/Bug Watcher**. Another option is to go to <http://www.cisco.com/support/bugtools/>.

**Table 2** Caveats Reference for Cisco IOS Release 12.3 YU

DDTS Number	Open in Release	Resolved in Release
CSCeg03019	12.3(14)YU, 12.3(14)YU1	
CSCei33960		12.3(14)YU1
CSCei61732		12.3(14)YU1
CSCsb17078		12.3(14)YU, 12.3(14)YU1
CSCsb22886	12.3(14)YU	12.3(14)YU1
CSCsb24007		12.3(14)YU1
CSCsb39865		12.3(14)YU1

## Open Caveats—Cisco IOS Release 12.3(14)YU1

This section documents possible unexpected behavior by Cisco IOS Release 12.3(14)YU1 and describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCeg03019

Cisco Express Forwarding (CEF) may not work over different tunnels.

This issue occurs when both generic routing encapsulation (GRE) and IP in IP (IPIP) tunnels are configured, and the packet traverses both.

There are no known workarounds.

## Resolved Caveats—Cisco IOS Release 12.3(14)YU1

All the caveats listed in this section are resolved in Cisco IOS Release 12.3(14)YU1. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCei33960

A Cisco GGSN in GTP-SR redundancy configuration may unexpectedly reload under the following situations:

After one round of switchover, the new active GGSN (the previous standby GGSN) may unexpectedly reload during bulk-sync after the new standby GGSN boots up.

This unexpected reload may occur after the following sequence of events:

1. The GGSN is loaded up as standby.
2. The standby GGSN recreates PDPs and GTP paths as PDPs are synced from the active GGSN.
3. The GTP path are deleted on the active but the deleted path may fail to sync to the standby GGSN due to whatever reasons.
4. While the GTP path is present on the standby GGSN, the same GTP path is created again on the active due to new PDPs are created.
5. The new created GTP path is synced to the standby.
6. After the GTP path is deleted on the standby, the standby becomes the new active after switchover. Now if this new active does bulksync, it unexpectedly reloads.

There are no known workarounds.

- CSCei61732

Cisco IOS may permit arbitrary code execution after exploitation of a heap-based buffer overflow vulnerability. Cisco has included additional integrity checks in its software, as further described below, that are intended to reduce the likelihood of arbitrary code execution.

Cisco has made free software available that includes the additional integrity checks for affected customers.

This advisory is posted at <http://www.cisco.com/warp/public/707/cisco-sa-20051102-timers.shtml>.

- CSCsb17078

Spurious Memory Access is seen on the GGSN.

This issue occurs when executing the **getmany** command on the MIB, CISCO-GPRS-ACC-PT-MIB.

There are no known workarounds.

- CSCsb22886

Charging gateway (CG) switchover fails.

This issue occurs when a CG sends a redirection message, but the GGSN fails to switch the backup CG to the current CG if the path protocol is TCP

Workaround: Use UDP.

- CSCsb24007

Multiple voice-related vulnerabilities are identified in Cisco IOS software, one of which is also shared with Cisco Unified Communications Manager. These vulnerabilities pertain to the following protocols or features:

- Session Initiation Protocol (SIP)
- Media Gateway Control Protocol (MGCP)
- Signaling protocols H.323, H.254
- Real-time Transport Protocol (RTP)
- Facsimile reception

Cisco has made free software available to address these vulnerabilities for affected customers. Fixed Cisco IOS software listed in the Software Versions and Fixes section contains fixes for all vulnerabilities mentioned in this advisory.

There are no workarounds available to mitigate the effects of any of the vulnerabilities apart from disabling the protocol or feature itself.

This advisory is posted at

<http://www.cisco.com/warp/public/707/cisco-sa-20070808-IOS-voice.shtml>

- CSCsb39865

In Cisco Gateway GPRS Support Node (GGSN) running release 5.2 and 6.0 software, the CAUSE IE in PDP update-context-response from GGSN shall be set to 201 (Mandatory IE incorrect) on receiving a PDP update-context-request with Max Bit-Rate (MBR) set to 0 KBPS

This occurs when SGSN sends PDP update-context-request to GGSN with Uplink/Downlink Max Bit Rate (MBR) set to zero KBPS.

There are no known workarounds.

## Open Caveats—Cisco IOS Release 12.3(14)YU

This section documents possible unexpected behavior by Cisco IOS Release 12.3(14)YU and describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCeg03019

Cisco Express Forwarding (CEF) may not work over different tunnels.

This issue occurs when both generic routing encapsulation (GRE) and IP in IP (IPIP) tunnels are configured, and the packet traverses both.

There are no known workarounds.

- CSCsb22886

Charging gateway (CG) switchover fails.

This issue occurs when a CG sends a redirection message, but the GGSN fails to switch the backup CG to the current CG if the path protocol is TCP

Workaround: Use UDP.

## Resolved Caveats—Cisco IOS Release 12.3(14)YU

All the caveats listed in this section are resolved in Cisco IOS Release 12.3(14)YU. This section describes only severity 1 and 2 caveats and select severity 3 caveats.

- CSCsb17078

Spurious Memory Access is seen on the GGSN.

This issue occurs when executing the **getmany** command on the MIB, CISCO-GPRS-ACC-PT-MIB.

There are no known workarounds.

## Related Documentation

The following sections describe the documentation available for the Cisco Cisco 7000 family of routers. These documents consist of hardware and software installation guides, Cisco IOS configuration guides and command references, system error messages, feature modules, and other documents.

Documentation is available as printed manuals or electronic documents, except for feature modules, which are available online on [Cisco.com](http://www.cisco.com) and <http://www.cisco.com/univercd/home/index.htm>.

Use these release notes with these documents:

- [Release-Specific Documents, page 10](#)
- [Platform-Specific Documents, page 11](#)
- [Feature Modules, page 11](#)
- [Cisco Feature Navigator, page 12](#)
- [Cisco IOS Software Documentation Set, page 12](#)
- [Cisco IOS Software Documentation Set, page 12](#)

## Release-Specific Documents

The following documents are specific to Cisco IOS Release 12.3 and are located on Cisco.com and the Documentation CD-ROM:

- *Cross-Platform Release Notes for Cisco IOS Release 12.3*

On Cisco.com at:

**Technical Documents: Cisco IOS Software: Cisco IOS Release 12.3: Release Notes: Cross-Platform Release Notes**

On the Documentation CD-ROM at:

**Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.3: Release Notes: Cross-Platform Release Notes**

- Product bulletins, field notices, and other release-specific documents on Cisco.com at:

**Technical Documents**

- *Caveats for Cisco IOS Release 12.3(14)YU1*

As a supplement to the caveats listed in “[Caveats for Cisco IOS Release 12.3 YU](#)” in these release notes, see *Caveats for Cisco IOS Release 12.3* and *Caveats for Cisco IOS Release 12.3 T*, which contains caveats applicable to all platforms for all maintenance releases of Cisco IOS Release 12.3 and Cisco IOS Release 12.3 T.

On Cisco.com at:

**Technical Documents: Cisco IOS Software: Cisco IOS Release 12.3: Release Notes: Caveats**

On the Documentation CD-ROM at:

**Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.3: Caveats**




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**Note** If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any release. To reach Bug Navigator II, log in to Cisco.com and click **Service & Support: Technical Assistance Center: Select & Download Software: Jump to a software resource: Software Bug Toolkit/Bug Watcher**. Another option is to go to <http://www.cisco.com/support/bugtools/bugtool.shtml>.

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## Platform-Specific Documents

These documents are available for the Cisco 7000 family of routers on Cisco.com and the Documentation CD-ROM:

- *Cisco 7000 User Guide*
- *Cisco 7000 Hardware Installation and Maintenance*
- *Cisco 7010 User Guide*
- *Quick Start Guide Cisco 7100 Series VPN Router*
- *Cisco 7200 VXR Installation and Configuration Guide*
- *Cisco 7200 Routers Quick Start Guide*
- *Cisco 7206 Installation and Configuration Guide*
- *Cisco 7204 Installation and Configuration Guide*
- *Quick Reference for Cisco 7204 Installation*
- *Cisco 7202 Installation and Configuration Guide*
- *Cisco 7301 Installation and Configuration Guide*
- *Network Processing Engine and Network Services Engine Installation and Configuration*

On Cisco.com at:

**Technical Documents: All Product Documentation: Core/High-End Routers**

On the Documentation CD-ROM at:

**Cisco Product Documentation: All Product Documentation: Core/High-End Routers**

## Feature Modules

Feature modules describe new features supported by Cisco IOS Release 12.3(14)YU1 and are updates to the Cisco IOS documentation set. A feature module consists of a brief overview of the feature, benefits, configuration tasks, and a command reference. As updates, the feature modules are available online only. Feature module information is incorporated in the next printing of the Cisco IOS documentation set.

On Cisco.com at:

**Technical Documents: Cisco IOS Software: Cisco IOS Release 12.3: New Feature Documentation**

On the Documentation CD-ROM at:

**Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.3: New Feature Documentation**

## Cisco Feature Navigator

Cisco IOS software is packaged in feature sets that are supported on specific platforms. To get updated information regarding platform support for this feature, access Cisco Feature Navigator. Cisco Feature Navigator dynamically updates the list of supported platforms as new platform support is added for the feature.

Cisco Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a specific set of features and which features are supported in a specific Cisco IOS image. You can search by feature or release. Under the release section, you can compare releases side by side to display both the features unique to each software release and the features in common.

To access Cisco Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to [cco-locksmith@cisco.com](mailto:cco-locksmith@cisco.com). An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at this URL:

<http://tools.cisco.com/RPF/register/register.do>

Cisco Feature Navigator is updated regularly when major Cisco IOS software releases and technology releases occur. For the most current information, go to the Cisco Feature Navigator home page at the following URL:

<http://tools.cisco.com/ITDIT/CFN/jsp/index.jsp>

## Cisco IOS Software Documentation Set

The Cisco IOS software documentation set consists of the Cisco IOS configuration guides, Cisco IOS command references, and several other supporting documents.

### Documentation Modules

Each module in the Cisco IOS documentation set consists of one or more configuration guides and one or more corresponding command references. Chapters in a configuration guide describe protocols, configuration tasks, and Cisco IOS software functionality, and contain comprehensive configuration examples. Chapters in a command reference provide complete command syntax information. Use each configuration guide with its corresponding command reference.

On [Cisco.com](http://www.cisco.com) at:

**Products and Services: Cisco IOS Software: Cisco IOS Releases 12.3: Instructions and Guides**

On <http://www.cisco.com/univercd/home/index.htm> at:

**Cisco IOS Software: Cisco IOS Release 12.3: Configuration Guides and Command References**

## Cisco IOS Release 12.3 Documentation Set Contents

Table 3 lists the contents of the Cisco IOS Release 12.3 software documentation set, which is available in electronic form and in printed form if ordered.



### Note

You can find the most current Cisco IOS documentation on Cisco.com and the Documentation CD-ROM. These electronic documents may contain updates and modifications made after the hard-copy documents were printed.

On [Cisco.com](http://www.cisco.com) at:

**Products and Services: Cisco IOS Software: Cisco IOS Releases 12.3: Instructions and Guides**

On <http://www.cisco.com/univercd/home/index.htm> at:

**Cisco IOS Software: Cisco IOS Release 12.3**

**Table 3 Cisco IOS Release 12.3 Documentation Set**

Books	Major Topics
<ul style="list-style-type: none"> <li><i>Cisco IOS Configuration Fundamentals and Network Management Configuration Guide</i></li> <li><i>Cisco IOS Configuration Fundamentals and Network Management Command Reference</i></li> </ul>	Configuration Fundamentals Overview Cisco IOS User Interfaces File Management System Management
<ul style="list-style-type: none"> <li><i>Cisco IOS Bridging and IBM Networking Configuration Guide</i></li> <li><i>Cisco IOS Bridging and IBM Networking Command Reference, Volume 1 of 2: Bridging</i></li> <li><i>Cisco IOS Bridging and IBM Networking Command Reference, Volume 2 of 2: IBM Networking</i></li> </ul>	Transparent Bridging SRB Token Ring Inter-Switch Link Token Ring Route Switch Module RSRB DLSw+ Serial Tunnel and Block Serial Tunnel LLC2 and SDLC IBM Network Media Translation SNA Frame Relay Access NCIA Client/Server Airline Product Set DSPU and SNA Service Point SNA Switching Services Cisco Transaction Connection Cisco Mainframe Channel Connection CLAW and TCP/IP Offload CSNA, CMPC, and CMPC+ TN3270 Server

**Table 3 Cisco IOS Release 12.3 Documentation Set (continued)**

Books	Major Topics
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Dial Technologies Configuration Guide</i></li> <li>• <i>Cisco IOS Dial Technologies Command Reference</i></li> </ul>	<ul style="list-style-type: none"> <li>Preparing for Dial Access</li> <li>Modem and Dial Shelf Configuration and Management</li> <li>ISDN Configuration</li> <li>Signaling Configuration</li> <li>Dial-on-Demand Routing Configuration</li> <li>Dial Backup Configuration</li> <li>Dial Related Addressing Service</li> <li>Virtual Templates, Profiles, and Networks</li> <li>PPP Configuration</li> <li>Callback and Bandwidth Allocation Configuration</li> <li>Dial Access Specialized Features</li> <li>Dial Access Scenarios</li> </ul>
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Interface and Hardware Component Configuration Guide</i></li> <li>• <i>Cisco IOS Interface and Hardware Component Command Reference</i></li> </ul>	<ul style="list-style-type: none"> <li>LAN Interfaces</li> <li>Serial Interfaces</li> <li>Logical Interfaces</li> </ul>
<ul style="list-style-type: none"> <li>• <i>Cisco IOS IP Configuration Guide</i></li> <li>• <i>Cisco IOS IP Command Reference, Volume 1 of 4: Addressing and Services</i></li> <li>• <i>Cisco IOS IP Command Reference, Volume 2 of 4: Routing Protocols</i></li> <li>• <i>Cisco IOS IP Command Reference, Volume 3 of 4: Multicast</i></li> <li>• <i>Cisco IOS IP Command Reference, Volume 4 of 4: IP Mobility</i></li> </ul>	<ul style="list-style-type: none"> <li>IP Addressing and Services</li> <li>IP Routing Protocols</li> <li>IP Multicast</li> </ul>
<ul style="list-style-type: none"> <li>• <i>Cisco IOS AppleTalk and Novell IPX Configuration Guide</i></li> <li>• <i>Cisco IOS AppleTalk and Novell IPX Command Reference</i></li> </ul>	<ul style="list-style-type: none"> <li>AppleTalk</li> <li>Novell IPX</li> </ul>
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Configuration Guide</i></li> <li>• <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Command Reference</i></li> </ul>	<ul style="list-style-type: none"> <li>Apollo Domain</li> <li>Banyan VINES</li> <li>DECnet</li> <li>ISO CLNS</li> <li>XNS</li> </ul>
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Voice Configuration Library</i></li> <li>• <i>Cisco IOS Voice Command Reference</i></li> </ul>	<ul style="list-style-type: none"> <li>Voice over IP</li> <li>Call Control Signaling</li> <li>Voice over Frame Relay</li> <li>Voice over ATM</li> <li>Telephony Applications</li> <li>Trunk Management</li> <li>Fax, Video, and Modem Support</li> </ul>
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Quality of Service Solutions Configuration Guide</i></li> <li>• <i>Cisco IOS Quality of Service Solutions Command Reference</i></li> </ul>	<ul style="list-style-type: none"> <li>Packet Classification</li> <li>Congestion Management</li> <li>Congestion Avoidance</li> <li>Policing and Shaping</li> <li>Signaling</li> <li>Link Efficiency Mechanisms</li> </ul>

**Table 3** Cisco IOS Release 12.3 Documentation Set (continued)

Books	Major Topics
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Security Configuration Guide</i></li> <li>• <i>Cisco IOS Security Command Reference</i></li> </ul>	AAA Security Services Security Server Protocols Traffic Filtering and Firewalls IP Security and Encryption Passwords and Privileges Neighbor Router Authentication IP Security Options Supported AV Pairs
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Switching Services Configuration Guide</i></li> <li>• <i>Cisco IOS Switching Services Command Reference</i></li> </ul>	Cisco IOS Switching Paths NetFlow Switching Multiprotocol Label Switching Multilayer Switching Multicast Distributed Switching Virtual LANs LAN Emulation
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Wide-Area Networking Configuration Guide</i></li> <li>• <i>Cisco IOS Wide-Area Networking Command Reference</i></li> </ul>	ATM Broadband Access Frame Relay SMDS X.25 and LAPB
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Mobile Wireless Configuration Guide</i></li> <li>• <i>Cisco IOS Mobile Wireless Command Reference</i></li> </ul>	General Packet Radio Service
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Terminal Services Configuration Guide</i></li> <li>• <i>Cisco IOS Terminal Services Command Reference</i></li> </ul>	ARA LAT NAS1 Telnet TN3270 XRemote X.28 PAD Protocol Translation
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Configuration Guide Master Index</i></li> <li>• <i>Cisco IOS Command Reference Master Index</i></li> <li>• <i>Cisco IOS Debug Command Reference</i></li> <li>• <i>Cisco IOS Software System Messages</i></li> </ul>	

# Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

## Cisco.com

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

<http://www.cisco.com/univercd/home/home.htm>

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco websites can be accessed from this URL:

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

## Ordering Documentation

You can find instructions for ordering documentation at this URL:

[http://www.cisco.com/univercd/cc/td/doc/es\\_inpk/pdi.htm](http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm)

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/en/US/partner/ordering/index.shtml>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

## Documentation Feedback

You can submit e-mail comments regarding Cisco IOS software release notes and caveats documentation to [relnote-feedback@cisco.com](mailto:relnote-feedback@cisco.com).

You can submit e-mail comments about technical documentation to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

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

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

We appreciate your comments.

# Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour-a-day, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance. If you do not hold a valid Cisco service contract, please contact your reseller.

## Cisco TAC Website

The Cisco TAC website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year. The Cisco TAC website is located at this URL:

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

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

<http://tools.cisco.com/RPF/register/register.do>

## Opening a TAC Case

Using the online TAC Case Open Tool is the fastest way to open P3 and P4 cases. (P3 and P4 cases are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using the recommended resources, your case will be assigned to a Cisco TAC engineer. The online TAC Case Open Tool is located at this URL:

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

For P1 or P2 cases (P1 and P2 cases are those in which your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553-2447

For a complete listing of Cisco TAC contacts, go to this URL:

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

## TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your network is “down” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

## Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The Cisco Product Catalog describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

[http://www.cisco.com/en/US/products/products\\_catalog\\_links\\_launch.html](http://www.cisco.com/en/US/products/products_catalog_links_launch.html)

- Cisco Press publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press online at this URL:

<http://www.ciscopress.com>

- Packet magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:

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

- iQ Magazine is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

- Internet Protocol Journal is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

[http://www.cisco.com/en/US/about/ac123/ac147/about\\_cisco\\_the\\_internet\\_protocol\\_journal.html](http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html)

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

<http://www.cisco.com/en/US/learning/index.html>

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This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section on page 9.

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