



# Release Notes for Cisco IAD2420 Series for Cisco IOS Release 12.1 YD

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February 12, 2002

Cisco IOS Release 12.1(5) YD6

78-12644-01 Rev. F0

These release notes for the Cisco IAD2420 series describe the enhancements provided in Cisco IOS Release 12.1(5) YD6. These release notes are updated as needed.

For a list of the software caveats that apply to Release 12.1(5) YD6, see [Caveats for Cisco IOS Release 12.1\(5\) YD, page 8](#) and *Caveats for Cisco IOS Release 12.1 T* that accompanies these release notes. This caveats document is updated for every maintenance release and is also located on Cisco.com and the Documentation CD-ROM.

Use these release notes with *Cross-Platform Release Notes for Cisco IOS Release 12.1* located on Cisco.com and the Documentation CD-ROM.

## Contents

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# Introduction

The Cisco IAD2400 Series Integrated Access Devices are fixed configuration multi-service customer premises equipment (CPE) platforms, targeted at emerging competitive local exchange carriers (CLECs), incumbent local exchange carriers (ILECs), and inter-exchange carriers (IXCs). The IAD2420 series enables service providers to cost effectively deploy next generation managed services for the growing needs of small and medium businesses (SMB) over a single high speed access link. The IAD2400 series products support both voice over IP (VoIP) and voice over ATM (VoAAL2), with high-density analog or digital voice interfaces.

The IAD2420 is an IP ONLY platform. It does not support other local area network (LAN) protocols like IPX, Appletalk, or SNA. Additionally, the IAD2400 series only supports simple gateway control protocol (SGCP) and media gateway control protocol 0.1 (MGCP). It does not support H.323 or session initiation protocol (SIP) for voice signaling.

The IAD series is a fixed configuration platform and comes with the required Flash memory and random access memory (RAM) for the operation of the platform. Customers do not need to acquire memory separately. [Table 1](#) lists Cisco IAD2400 series product numbers with the corresponding WAN and telephony interfaces.

**Table 1** IAD2400 Series Product Numbers

Product Number	WAN Interface	Telephony Interface
IAD2421-8FXS	T1	8 Analog FXS Ports
IAD2421-16FXS	T1	16 Analog FXS Ports
IAD2421-1T1	T1	1 T1 PBX Port
IAD2423-8FXS	ADSL	8 Analog FXS Ports
IAD2423-16FXS	ADSL	16 Analog FXS Ports

## System Requirements

This section describes the system requirements for Release 12.1(5) YD6:

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

**Table 2** Minimum Memory Recommendations for the Cisco IAD 2420 Series

Image Name	Software Image	Flash Memory Recommended	DRAM Memory Recommended	Runs From
IP/ATM/VOIP/VOATM	c2420-a2i8sv5-mz	8 MB	64 MB	RAM

## Hardware Supported

Table 3 lists the supported interfaces for the Cisco IAD2420 series for Cisco IOS Release 12.1(5) YD6. Each Cisco IAD2420 series router is preconfigured for one wide-area network (WAN) port. The WAN port is either a T1 port or an asymmetric digital subscriber line (ADSL) port. Each Cisco IAD2420 is also preconfigured with either 8 or 16 foreign exchange station (FXS) analog voice ports or one T1 digital voice port for connection to a private branch exchange (PBX).

**Table 3** Supported Interfaces on the Cisco IAD2420 Series

Interface, Network Module, or Data Rate	Product Description	Platforms
<b>WAN Interfaces</b>	One T1 port (balanced, per ANSI T1.403) for connection to a WAN or carrier network	IAD2421
	One ADSL port for connection to a WAN or carrier network (DSLAM)	IAD2423
<b>PBX Interfaces</b>	One 8-line or 16-line analog FXS interface (loop-start or ground-start) for connection to analog phones, key systems, or PBXs.	IAD2421 and IAD2423
	One T1 port with channel-associated signaling (CAS) for connection to a digital PBX	IAD2421
<b>Ethernet Interface</b>	One 10BaseT LAN connection	IAD2421 and IAD2423
<b>Serial Data Interface</b>	One serial data interface for connections to WAN, or to user network. This interface supports HDLC, FR, or PPP encapsulations.	IAD2421 and IAD2423
<b>Administrative Interfaces</b>	One EIA/TIA-32 asynchronous serial port for connection to a console	IAD2421 and IAD2423
	One EIA/TIA-32 asynchronous serial port for connection to a modem	IAD2421 and IAD2423

## Determining the Software Version

To determine the version of Cisco IOS software running on a Cisco IAD2420, log in to the router and enter the **show version EXEC** command:

```
router>show version
Cisco Internetwork Operating System Software
IOS (tm) IAD2420 Software (C2420-A2I8SV5-MZ), Version 12.1(5) YD6, RELEASE SOFTWARE
```

## 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/130/upgrade\\_index.shtml](http://www.cisco.com/warp/public/130/upgrade_index.shtml)

## Feature Set Tables

Cisco IOS software is packaged in feature sets consisting of software images—depending on the platform. Table 3 lists the Cisco IOS Release 12.1(5) YD6 feature set image for the Cisco IAD2420 series platforms.

Cisco IOS Release 12.1(5) YD6 supports the same feature sets as Cisco IOS Release 12.1(5) T, but Cisco IOS Release 12.1(5) YD6 can include new features supported by the Cisco IAD2420.

As shown in Table 4, one image is supported by the Cisco IAD2420 series for Cisco IOS Release 12.1(5) YD6.

**Table 4** Image Supported by the Cisco IAD2420 Series

Image Name	Software Image	Platforms
IP/ATM/VOIP/VOATM	c2420-a2i8sv5-mz	All Cisco IAD2420 series platforms



### Caution

Cisco IOS images with strong encryption (including, but not limited to, 168-bit Triple Data Encryption Standard [3DES] data encryption feature sets) are subject to United States 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 United States government regulations. When applicable, purchaser and 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).

Table 5 lists the features and feature set supported by the Cisco IAD2420 series in Cisco IOS Release 12.1(5) YD6.



### Note

This table might not be cumulative or list all the features in each image. You can find the most current Cisco IOS documentation on Cisco.com. If you have a Cisco.com login account, you can find image and release information regarding features prior to Cisco IOS Release 12.1(5) T by using the Feature Navigator tool at <http://www.cisco.com/go/fn>.

**Table 5** List of Features Supported by the IP/ATM/VOIP/VOATM Feature Set for the Cisco IAD2420

Features
<a href="#">IP Keyswitch</a>
<a href="#">Survivable Remote Site Telephony</a>

## New and Changed Information

The following is a list of the new hardware and software features supported by the Cisco IAD2420 for Cisco IOS 12.1(5) YD6.

### New Hardware and Software Features in Release 12.1(5) YD6

There are no new hardware and software features supported by the Cisco IAD2420 series in Cisco IOS Release 12.1(5) YD6.

### New Hardware and Software Features in Release 12.1(5) YD5

There are no new hardware and software features supported by the Cisco IAD2420 series in Cisco IOS Release 12.1(5) YD5.

### New Hardware and Software Features in Release 12.1(5) YD4

There are no new hardware and software features supported by the Cisco IAD2420 series in Cisco IOS Release 12.1(5) YD4.

### New Hardware and Software Features in Release 12.1(5) YD3

There are no new hardware and software features supported by the Cisco IAD2420 series in Cisco IOS Release 12.1(5) YD3.

### New Hardware and Software Features in Release 12.1(5) YD2

There are no new hardware and software features supported by the Cisco IAD2420 series in Cisco IOS Release 12.1(5) YD2.

### New Hardware and Software Features in Release 12.1(5) YD1

There are no new hardware and software features supported by the Cisco IAD2420 series in Cisco IOS Release 12.1(5) YD1.

### New Hardware Features in Release 12.1(5) YD

There are no new hardware features supported by the Cisco IAD2420 series in Cisco IOS Release 12.1(5) YD.

## New Software Features in Release 12.1(5) YD

### IP Keyswitch

The IP Keyswitch feature provides Cisco IP phone call-handling capabilities in a LAN environment. This feature enables the Cisco IAD2400 series to provide IP Keyswitch capability integrated in the router for the Cisco IP Phone 7960, Cisco IP Phone 7940, and Cisco IP Phone 7910. It loads phone images, and configures, and manages the Cisco IP phones in your LAN. It also provides a host of features such as call forwarding, call transfer, and hold, for example. The IP Keyswitch feature provides you with integrated call processing capabilities for a small office with up to 48 extensions.

Refer to the following documents for further information:

[http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121newft/121limit/121yd/121yd\\_5/keys.htm](http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121newft/121limit/121yd/121yd_5/keys.htm)

### Survivable Remote Site Telephony

The Survivable Remote Site Telephony feature provides the Cisco CallManager with fallback support for the Cisco IP phones attached to the router on your local Ethernet. Cisco IOS Release 12.1(5)YD integrates this feature on the Cisco IAD2400 series and enables the routers to provide call handling support for the Cisco IP phones when the Cisco IP phones lose connection to the remote primary, secondary, or tertiary Cisco CallManager or when the WAN connection is down.

The Cisco CallManager 3.0 supports Cisco IP phones at remote sites attached to Cisco branch office multi-service routers across the WAN. Prior to Survivable Remote Site Telephony, when the WAN connection between the remote branch office router and the Cisco CallManager failed, or connectivity with the Cisco CallManager was lost for some other reason, the Cisco IP phones at the branch office became unusable for the duration of the failure. To overcome this problem the Survivable Remote Site Telephony feature was developed. The feature provides call-handling support on the branch-office router for its attached Cisco IP phones when a failure occurs. The system automatically detects the failure, and using Simple Network Auto Provisioning (SNAP) technology, auto configures the branch office router to provide call processing service for the local IP phones. When the failure is restored, call-handling capabilities for the Cisco IP phones switch back to the primary Cisco CallManager. During a failure, the Cisco IP phone displays a message to inform the user that the Cisco IP phone is in the Cisco CallManager fallback mode and is able to perform a limited set of functions.

Refer to the following documents for further information:

[http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121newft/121limit/121yd/121yd\\_5/fallback.htm](http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121newft/121limit/121yd/121yd_5/fallback.htm)

# Important Notes

## Caveat CSCdr91706 and IOS HTTP Vulnerability

A defect in multiple releases of Cisco IOS software will cause a Cisco router or switch to halt and reload if the IOS HTTP service is enabled, browsing to `http://router-ip/anytext?/` is attempted, and the enable password is supplied when requested. This defect can be exploited to produce a denial of service (DoS) attack.

The vulnerability, identified as Cisco bug ID CSCdr91706, affects virtually all mainstream Cisco routers and switches running Cisco IOS software releases 12.0 through 12.1, inclusive. This is not the same defect as CSCdr36952.

The vulnerability has been corrected and Cisco is making fixed releases available for free to replace all affected IOS releases. Customers are urged to upgrade to releases that are not vulnerable to this defect, as shown in detail below.

This vulnerability can only be exploited if the enable password is known or not set.

You are strongly encouraged to read the complete advisory, which is available at <http://www.cisco.com/warp/public/707/ioshttpserverquery-pub.shtml>.

## Product Number Change

Beginning with Cisco IOS Release 12.0(7)XK, Cisco changed the product numbers used to order a specific Cisco IOS software image. In short, Cisco will remove the periods separating the release train, maintenance release, and build number. The following table provides some examples.

Old Product Number	New Product Number	Release	Image Description
S364AR1K2-12.1.5=	S364AR1K2-1215=	Cisco IOS Release 12.1(5)	Cisco 3640 Series IOS Enterprise/SNA SW PLUS IPSEC 3DES
S26CP-12.1.5=	S26CP-1215=	Cisco IOS Release 12.1(5)	Cisco 2600 Series IOS IP Plus

## Deprecated MIBs

Older Cisco Management Information Bases (MIBs) will be replaced in a future release. OLD-CISCO-\* MIBs are currently migrated into more scalable MIBs—without affecting existing Cisco IOS products or NMS applications. You can update from deprecated MIBs to the replacement MIBs as shown in [Table 6](#).

**Table 6** *Deprecated MIBs*

Deprecated MIB	Replacement
OLD-CISCO-CHASSIS-MIB	ENTITY-MIB
OLD-CISCO-CPUK-MIB	In Development
OLD-CISCO-ENV-MIB	CISCO-ENVMON-MIB

**Table 6** *Deprecated MIBS (continued)*

Deprecated MIB	Replacement
OLD-CISCO-FLASH-MIB	CISCO-FLASH-MIB
OLD-CISCO-INTERFACES-MIB	IF-MIB CISCO-QUEUE-MIB
OLD-CISCO-IP-MIB	In Development
OLD-CISCO-MEMORY-MIB	CISCO-MEMORY-POOL-MIB
OLD-CISCO-SYS-MIB	(Compilation of other OLD* MIBS)
OLD-CISCO-SYSTEM-MIB	CISCO-CONFIG-COPY-MIB
OLD-CISCO-TCP-MIB	CISCO-TCP-MIB
OLD-CISCO-TS-MIB	In Development

## Caveats for Cisco IOS Release 12.1(5) YD

Caveats describe unexpected behavior or defects 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 12.1 are also in Cisco IOS Release 12.1 T.

For information on caveats in Cisco IOS Release 12.1, see *Caveats for Cisco IOS Release 12.1*

For information on caveats in Cisco IOS Release 12.1 T, see *Caveats for Cisco IOS Release 12.1T*, which lists severity 1 and 2 caveats and select severity 3 caveats and is located on Cisco.com and the Documentation CD-ROM.

Caveat numbers and brief descriptions for Cisco IOS Release 12.1(5) YD6 are listed in [Table 8](#). For details about a particular caveat, go to Bug Toolkit at:

<http://www.cisco.com/kobayashi/bugs/bugs.html>

To access this location, you must have an account on Cisco.com. For information about how to obtain an account, go to the [“Feature Navigator”](#) section on page 14.



### 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/>.

## Open Caveats—Cisco IOS Release 12.1(5) YD6

There are no open caveats specific to Cisco IOS Release 12.1(5) YD6 that require documentation in the release notes.

## Resolved Caveats—Cisco IOS Release 12.1(5) YD6

All the caveats listed in [Table 8](#) are resolved in Cisco IOS Release 12.1(5) YD6. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

**Table 7** *Resolved Caveats for Release 12.1(5) YD6*

Caveat ID Number	Description
CSCdw65903	An error can occur with management protocol processing. Please use the following URL for further information:  <a href="http://www.cisco.com/cgi-bin/bugtool/onebug.pl?bugid=CSCdw65903">http://www.cisco.com/cgi-bin/bugtool/onebug.pl?bugid=CSCdw65903</a>

## Open Caveats—Cisco IOS Release 12.1(5) YD5

There are no open caveats specific to Cisco IOS Release 12.1(5) YD5 that require documentation in the release notes.

## Resolved Caveats—Cisco IOS Release 12.1(5) YD5

All the caveats listed in [Table 8](#) are resolved in Cisco IOS Release 12.1(5) YD5. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

**Table 8** *Resolved Caveats for Release 12.1(5) YD5*

Caveat ID Number	Description
CSCdu72592	Symptom: In the lab environment, after three days of moderate voice traffic testing using the Abacus Bulk Call Generator, the Cisco IAD2420 router sometimes crashes.  Workaround: None.
CSCdv43814	VOIP leg MOH stream not played out to POTS leg
CSCdv69087	IAD2420 had incorrect ring voltage on voice ports

**Table 8 Resolved Caveats for Release 12.1(5) YD5**

Caveat ID Number	Description
CSCdv90928	<p>Symptom: The user will miss the incoming call since his/her is not rung when there is an incoming call.</p> <p>Cause: Telephone with high REN (Ring Equivalent Number) used on the Cisco IAD2420 will not ring when incoming call terminates to it.</p> <p>Workaround: Use telephone with low REN or use test command to change the DuSLIC COP register value to be able to handle up to 5 REN; however, these register value will not be persistent for next reload. The test commands are:</p> <p style="text-align: center;"><b>test voice port 1/x write cop 8c 03</b></p> <p style="text-align: center;"><b>test voice port 1/x write cop 8d 54</b></p>
CSCdw10360	<p>Symptom: Customer has reported popping and clicking noises on analog 2420 FXS ports. The noise mostly occurs on ports 1 and 2 but sometimes on 3 and 4, or on 9 and 10.</p> <p>Condition: Problems usually show up after a stress testing for a long period of time.</p> <p>Workaround: Avoid using the noisy ports.</p>

## Open Caveats—Cisco IOS Release 12.1(5) YD4

There are no open caveats specific to Cisco IOS Release 12.1(5) YD4 that require documentation in the release notes.

## Resolved Caveats—Cisco IOS Release 12.1(5) YD4

All the caveats listed in [Table 9](#) are resolved in Cisco IOS Release 12.1(5) YD4. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

**Table 9 Resolved Caveats for Release 12.1(5) YD4**

Caveat ID Number	Description
CSCdu82132	Router crashes with bus error at hdsprm_htsp_tsp_map

## Open Caveats—Cisco IOS Release 12.1(5) YD3

All the caveats listed in [Table 10](#) are open in Cisco IOS Release 12.1(5) YD3. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

**Table 10 Open Caveats for Release 12.1(5) YD3**

Caveat ID Number	Description
CSCdv09698	Traffic Shaping Malfunction Due to TDM Clock

## Resolved Caveats—Cisco IOS Release 12.1(5) YD3

All the caveats listed in [Table 11](#) are resolved in Cisco IOS Release 12.1(5) YD3. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

**Table 11** *Resolved Caveats for Release 12.1(5) YD3*

Caveat ID Number	Description
CSCdt80732	DSP FAIL/UNRESPONSIVE
CSCdu76565	Voice ports will not initialize when DSP are removed
CSCdu76660	MGCP unable to parse G/rbk(D*)
CSCdv12769	IAD2420 responds with 400 instead of 200 to RQNT from BTS10200
CSCdv11755	MC3810 crashed when testing FXO answer supervision with VoIP
CSCdv09698	Traffic shaping malfunction due to TDM clock

## Open Caveats—Cisco IOS Release 12.1(5) YD2

There are no open caveats specific to Cisco IOS Release 12.1(5) YD2 that require documentation in the release notes.

## Resolved Caveats—Cisco IOS Release 12.1(5) YD2

All the caveats listed in [Table 12](#) are resolved in Cisco IOS Release 12.1(5)YD2. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

**Table 12** *Resolved Caveats for Release 12.1(5) YD2*

Caveat ID Number	Description
CSCdu19876	Clear of large NAT table takes >10s and causes traceback
CSCds82435	net3: non-conformance regarding INFORMATION message
CSCdu07504	<b>sh voice dsp</b> causes reload
CSCdu07106	Softkeys are blank after failover to Vespa router.
CSCdt93866	Unchecked limits in NTP
CSCdt93862	Access level issue while using Web interface
CSCdt11503	IOS crashes when large OID (>256 fields) is received
CSCdt46181	Redzone corruption in pptp_tcp_readf()

## Open Caveats—Cisco IOS Release 12.1(5) YD1

All of the caveats in listed in [Table 13](#) are open in Cisco IOS Release 12.1(5)YD1. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

**Table 13** *Open Caveats for Release 12.1(5)YD1*

Caveat ID Number	Description
CSCdt46305	IAD2420 crashes with MGCP domain name length of 32
CSCdt77713	CCB list management problem
CSCdt49924	ISDN: isdn map not properly populating calling party number

## Resolved Caveats—Cisco IOS Release 12.1(5) YD1

All the caveats listed in [Table 14](#) are resolved in Cisco IOS Release 12.1(5) YD1. This table lists only severity 1 and 2 caveats and select severity 3 caveats.

**Table 14** *Resolved Caveats for Release 12.1(5) YD1*

Caveat ID Number	Description
CSCdu10269	SGCP CAS hung channel during stress test
CSCdt98254	SSRC turned to zero for comfort noise TX packet (g711uLaw-DSP3.5.15)
CSCdt82115	McCoy FPGA requires reset after FPGA download
CSCdt75167	NBAR feature does not support PPPoA
CSCdt65008	MGCP config does not take precedence over port config for orig port
CSCdt58459	IAD2421 rejects static RTP payload type 18 for G.729a calls
CSCdt52094	LLQ: Traffic drop when configuring LLQ in frame-relay interface
CSCdt16296	7206VXR crashes with ip_rtp_add_negative_cache
CSCdt20427	Spurious access at rate_limit_compress_adjust for all compr. pkt
CSCdt30629	Need to speed up RM to TACACS+ accounting processing
CSCds19979	TCP header compression does not work on virtual-access i/f
CSCds37837	MQC: dTS, police, and LLQ need to adjust for post-CRTP packet rate
CSCds43465	MQC: LLQ, Policer, Shaper should take CRTP compression feedback
CSCds47392	Destination phone continues to ring after source phone hangs up
CSCds73763	Router crashes when clear counter command is given

## Open and Resolved Caveats—Cisco IOS Release 12.1(5) YD

There are no open and resolved caveats specific to Cisco IOS Release 12.1(5) YD that require documentation in the release notes.

## Related Documentation

The following sections describe the documentation available for the Cisco IAD2420. 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 and the Documentation CD-ROM.

Use these release notes with these documents:

- [Release-Specific Documents, page 13](#)
- [Platform-Specific Documents, page 14](#)
- [Feature Modules, page 14](#)
- [Feature Navigator, page 14](#)
- [Cisco IOS Software Documentation Set, page 15](#)

## Release-Specific Documents

The following documents are specific to Cisco IOS Release 12.1 and are located on Cisco.com and the Documentation CD-ROM:

- *Cross-Platform Release Notes for Cisco IOS Release 12.1*

On Cisco.com at:

**Technical Documents: Cisco IOS Software: Cisco IOS Release 12.1: Release Notes: Cross-Platform Release Notes**

On the Documentation CD-ROM at:

**Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Release Notes: Cross-Platform Release Notes**

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

**Technical Documents**

- The “[Caveats for Cisco IOS Release 12.1\(5\) YD](#)” section on page 8

As a supplement to the caveats listed in “[Caveats for Cisco IOS Release 12.1\(5\) YD](#)” in these release notes, see *Caveats for Cisco IOS Release 12.1* and *Caveats for Cisco IOS Release 12.1T*, which contains caveats applicable to all platforms for all maintenance releases of Cisco IOS Release 12.1 and Cisco IOS Release 12.1 T.

On Cisco.com at:

**Technical Documents: Cisco IOS Software: Cisco IOS Release 12.1: Release Notes: Caveats**

On the Documentation CD-ROM at:

**Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Caveats**

**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>.

## Platform-Specific Documents

These documents are available for the Cisco IAD2420 on Cisco.com and the Documentation CD-ROM:

- *Cisco IAD2420 Series Quick Start Guide*
- *Cisco IAD2420 Series Software Configuration Guide*
- *Cisco IAD2420 Series Hardware Installation Guide*
- *Cisco IAD2420 Series Regulatory Compliance and Safety Information*

On Cisco.com, beginning under the **Service & Support** heading:

**Technical Documents: Access Servers and Access Routers: Integrated Access Devices: Cisco IAD2420 Series IADs**

On the Documentation CD-ROM at:

**Cisco Product Documentation: Access Servers and Access Routers: Integrated Access Devices: Cisco IAD2420 Series IADs**

## Feature Modules

Feature modules describe new features supported by Cisco IOS Release 12.1(5) YD6 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 12.1: New Feature Documentation**

On the Documentation CD-ROM at:

**Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: New Feature Documentation**

## Feature Navigator

Feature Navigator is a web-based tool that enables you to quickly determine which Cisco IOS software images support a particular set of features and which features are supported in a particular Cisco IOS image.

Feature Navigator is available 24 hours a day, 7 days a week. To access Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, e-mail the Contact Database Administration group at [cdbadmin@cisco.com](mailto:cdbadmin@cisco.com). If you do not have an account on Cisco.com, go to <http://www.cisco.com/register> and follow the directions to establish an account.

To use Feature Navigator, you must have a JavaScript-enabled web browser such as Netscape 3.0 or later, or Internet Explorer 4.0 or later. Internet Explorer 4.0 always has JavaScript enabled. To enable JavaScript for Netscape 3.x or Netscape 4.x, follow the instructions provided with the web browser. For JavaScript support and enabling instructions for other browsers, check with the browser vendor.

Feature Navigator is updated when major Cisco IOS software releases and technology releases occur. You can access Feature Navigator at the following URL:

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

## 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. The Cisco IOS software documentation set is shipped with your order in electronic form on the Documentation CD-ROM—unless you specifically ordered the printed versions.

### 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 at:

**Technical Documents: Cisco IOS Software: Cisco IOS Release 12.1: Configuration Guides and Command References**

On the Documentation CD-ROM at:

**Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: Configuration Guides and Command References**

### Release 12.1 Documentation Set

Table 15 lists the contents of the Cisco IOS Release 12.1 software documentation set, which is available in electronic form and in printed form if ordered.

**Note**

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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.

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On Cisco.com at:

**Technical Documents: Cisco IOS Software: Cisco IOS Release 12.1**

On the Documentation CD-ROM at:

**Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1**

**Table 15 Cisco IOS Software Release 12.1 Documentation Set**

Books	Chapter Topics
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Configuration Fundamentals Configuration Guide</i></li> <li>• <i>Cisco IOS Configuration Fundamentals 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 I</i></li> <li>• <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume II</i></li> </ul>	Transparent Bridging Source-Route Bridging Token Ring Inter-Switch Link Remote Source-Route Bridging DLSw+ STUN and BSTUN LLC2 and SDLC IBM Network Media Translation DSPU and SNA Service Point SNA Frame Relay Access Support APPN Cisco Database Connection NCI Client/Server Topologies Cisco Mainframe Channel Connection Airline Product Set
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Dial Services Configuration Guide: Terminal Services</i></li> <li>• <i>Cisco IOS Dial Services Configuration Guide: Network Services</i></li> <li>• <i>Cisco IOS Dial Services Command Reference</i></li> </ul>	X.25 over ISDN Appletalk Remote Access Asynchronous Callback, DDR, PPP, SLIP Bandwidth Allocation Control Protocol ISDN Basic Rate Service ISDN Caller ID Callback PPP Callback for DDR Channelized E1 & T1 Dial Backup for Dialer Profiles Dial Backup Using Dialer Watch Dial Backup for Serial Lines Peer-to-Peer DDR with Dialer Profiles DialOut Dial-In Terminal Services Dial-on-Demand Routing (DDR) Dial Backup Dial-Out Modem Pooling Large-Scale Dial Solutions Cost-Control Solutions Virtual Private Dialup Networks Dial Business Solutions and Examples
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Interface Configuration Guide</i></li> <li>• <i>Cisco IOS Interface Command Reference</i></li> </ul>	Interface Configuration Overview LAN Interfaces Logical Interfaces Serial Interfaces

**Table 15 Cisco IOS Software Release 12.1 Documentation Set (continued)**

<b>Books</b>	<b>Chapter Topics</b>
<ul style="list-style-type: none"> <li>• <i>Cisco IOS IP and IP Routing Configuration Guide</i></li> <li>• <i>Cisco IOS IP and IP Routing Command Reference</i></li> </ul>	IP Overview IP Addressing and Services IP Routing Protocols
<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>	AppleTalk Novell IPX
<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>	Network Protocols Overview Apollo Domain Banyan VINES DECnet ISO CLNS XNS
<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
<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>	Switching Services Switching Paths for IP Networks Virtual LAN (VLAN) Switching and Routing
<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>	Wide-Area Network Overview ATM Frame Relay SMDS X.25 and LAPB
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Multiservice Applications Configuration Guide</i></li> <li>• <i>Cisco IOS Multiservice Applications Command Reference</i></li> </ul>	Voice over IP Voice over Frame Relay Voice over ATM Voice over HDLC Frame Relay-ATM Internetworking Synchronized Clocks Video Support Universal Broadband Features

**Table 15 Cisco IOS Software Release 12.1 Documentation Set (continued)**

Books	Chapter Topics
<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>	Policy-Based Routing QoS Policy Propagation via BGP Committed Access Rate Weighted Fair Queueing Custom Queueing Priority Queueing Weighted Random Early Detection Scheduling Signaling RSVP Packet Drop Frame Relay Traffic Shaping Link Fragmentation RTP Header Compression
<ul style="list-style-type: none"> <li>• <i>Cisco IOS Command Reference Master Index</i></li> <li>• <i>Cisco IOS Configuration Guide Master Index</i></li> <li>• <i>Cisco IOS Dial Services Quick Configuration Guide</i></li> <li>• <i>Cisco IOS New Feature Index</i></li> <li>• <i>Cisco IOS System Error Messages</i></li> <li>• <i>Cisco IOS Debug Command Reference</i></li> </ul>	

## Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

### World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- <http://www.cisco.com>
- <http://www-china.cisco.com>
- <http://www-europe.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 is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

## Ordering Documentation

Cisco documentation is available in the following ways:

- Registered 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 corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

## Documentation Feedback

If you are reading Cisco product documentation on the World Wide Web, you can submit technical comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco.

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

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

Attn Document Resource Connection  
Cisco Systems, Inc.  
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 documentation, troubleshooting tips, and sample configurations from online tools. For Cisco.com registered users, additional troubleshooting tools are available from the TAC website.

### Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website:

<http://www.cisco.com>

## Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

### Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

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

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

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

### Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

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

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.



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This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section on page 13.

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