



Release Notes for the Cisco SOHO 70 Series for Cisco IOS Release 12.1(3)XP

March 14, 2002

These release notes for the Cisco SOHO series routers describe the enhancements provided in Cisco IOS Release 12.1(3)XP4. These release notes are updated as needed. Use these release notes with *Cross-Platform Release Notes for Cisco IOS Release 12.1* located on Cisco.com and the Documentation CD-ROM.

For a list of the software caveats that apply to Cisco IOS Release 12.1(3)XP4, see the “Caveats” section on page 6 and *Caveats for Cisco IOS Release 12.1 T*. The caveats document is updated for every maintenance release and is located on Cisco Connection Online (Cisco.com) and the Documentation CD-ROM.

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System Requirements

This section describes the system requirements for Release 12.1(3)XP4 and includes the following sections:

- Memory Requirements
- Hardware Supported, page 2
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Memory Requirements

Table 1 Memory Requirements for the Cisco SOHO Series

Platform Name	Software Image	Flash Memory	DRAM Memory	Runs from
SOHO 76 and SOHO 77	soho70-y1-mz	8 MB	16 MB	RAM

Hardware Supported

Cisco IOS Release 12.1(3)XP4 supports the Cisco SOHO series routers:

- SOHO 76
- SOHO 77

The SOHO 76 and SOHO 77 are small office and home office (SOHO) asymmetric digital subscriber line (ADSL) routers each with one Ethernet interface for connection to a service provider networks.

The SOHO routers also provide the following key hardware features:

- Connection to an ADSL network through an ADSL port.
- A central processing unit: 50 MHz MPC 855T RISC processor.
- Ability to be stacked or mounted on a wall.
- Locking power connectors and a Kensington-compatible locking slot.

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

Table 2 Supported Interfaces for the Cisco SOHO Series

Router	Ethernet Ports	ADSL Ports	Console Ports
SOHO 76 and SOHO 77	One 10BaseT (RJ-45)	RJ-45	RJ-45

Determining Your Software Release

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

```
router> show version
Cisco Internetwork Operating System Software
IOS(tm) Software (soho70-y1-mz), Version 12.1(3)XP4, RELEASE SOFTWARE
```

Upgrading to a New Software Release

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

<http://www.cisco.com/warp/public/620/6.html>



Note

This resource contains general upgrade information only. Currently, there is no information pertaining to the Cisco SOHO series specifically.

Feature Set Tables

The Cisco IOS software is packaged in feature sets consisting of software images—depending on the platform. Each feature set contains a specific set of Cisco IOS features. Release 12.1(3)XP4 supports the same feature sets as Releases 12.1 and 12.1 T, but Release 12.1(3)XP4 can include new features supported by the Cisco SOHO series routers.

Table 3 lists the features and feature sets supported by the Cisco SOHO series routers in Cisco IOS Release 12.1(3)XP4, and uses the following conventions:

- Yes—The feature is supported in the software image.
- No—The feature is not supported in the software image.



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. These electronic documents may contain updates and modifications made after the hardcopy documents were printed.

Table 3 Feature List by Feature Set for the Cisco SOHO Series

Features	Feature Set
	soho70-y1-mz
Address Conservation	
DHCP Client Address Negotiation	Yes
IPCP Address Negotiation	Yes
NAT	Yes

Table 3 Feature List by Feature Set for the Cisco SOHO Series (continued)

Features	Feature Set
	soho70-y1-mz
Bandwidth Optimization	
NetBIOS Name Caching	No
STAC Compression	Yes
Business-Class Quality of Service	
CBR, VBRnrt, UBR Traffic Classes	Yes
Class-Based Weighted Fair Queuing	No
IP Policy Routing	No
Per-Virtual Circuit Queuing	No
Per-Virtual Circuit Shaping	No
Weighted Random Early Detection	No
Business-Class Security	
GRE Tunneling	No
IP Basic and Extended Access Lists	Yes
NetBIOS Access Lists	No
PAP, CHAP, Local Password	Yes
Route and Router Authentication	Yes
Ease of Use and Deployment	
Cisco Fast Step Software	No
Easy IP Phase I and II	Yes
Enhanced Security	
Cisco IOS Firewall	No
Context-Based Access Control Lists	No
Denial-of-Service Detection	No
IPSec Encryption with 3DES and L2TP	No
Java Blocking	No
Real-Time Alerts	No
LAN	
IP	Yes
IPX	No
Transparent Bridging	Yes
Management	
CiscoView	No
SNTP	Yes
SNMP, Telnet, Console Port	Yes
Syslog	Yes

Table 3 Feature List by Feature Set for the Cisco SOHO Series (continued)

Features	Feature Set
	soho70-y1-mz
TACACS+ (also a security feature)	No
TFTP Client and Server	Yes
Routing	
IP Enhanced IGRP	No
IP Multicast (relay only)	No
IP-Policy Routing	No
IPX RIP/SAP IPX WAN	No
RIP, RIPv2	Yes

New and Changed Information

The following section lists the new software features supported by the Cisco SOHO series for Release 12.1(3)XP4 and above.

New Software Features in Release 12.1(3)XP2

The following new software feature is supported by the Cisco SOHO series for Cisco IOS Release 12.1(3)XP2:

Support for PVCs

Cisco SOHO 70 series routers running Cisco IOS Release 12.1(3)XP2 or later support up to ten permanent virtual circuits or connections (PVCs).

New Software Features in Release 12.1(3)XP

The following new software features are supported by the Cisco SOHO series for Cisco IOS Release 12.1(3)XP and above:

PPPoE

The Point to Point over Ethernet (PPPoE) feature is PPP encapsulation over ATM adaptation layer 5 (AAL5) to support bridged protocols. The encapsulation method is AAL5 Subnetwork Access Protocol (AAL5SNAP), which is PPP over Ethernet over Logical Link Control and Subnetwork Access Protocol (LLC/SNAP) over AAL5 over ATM. Although this encapsulation primarily supports bridging, if the router is configured to support routing, you can use PPPoE for routing.

PPPoA (RFC 2364)

The Point to Point over ATM (PPPoA) feature is PPP encapsulation over ATM AAL5 to support routed protocols. There are two encapsulation methods. The first method is AAL5MUX, which is PPP over AAL5 over ATM. The second method is AAL5SNAP, which is PPP over SNAP/LLC over AAL5 over ATM. PPPoA cannot be used for bridging.

Support for RFC1483

RFC1483 provides multi-protocol encapsulation over ATM AAL5 to support bridged and routed protocols. The feature includes two encapsulation methods. The first method, LLC/SNAP encapsulation, multiplexes multiple protocols over a single virtual circuit (VC). The second method, VC-multiplexed, assumes each protocol is carried over a separate VC.

Important Notes

The following sections contain important notes about Cisco IOS Release 12.1(3)XP4 that can apply to the Cisco SOHO series.

Caveat CSCdr91706 and IOS HTTP Vulnerability

A defect in multiple releases of Cisco IOS software causes a Cisco router or switch to halt and reload if the IOS HTTP service is enabled and you browse to `http://router-ip/anytext?/` and enter the enable password when it is requested. This defect can be exploited to produce a denial of service (DoS) attack. This vulnerability can only be exploited if the enable password is known or not set.

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. Cisco urges all customers to upgrade to releases that are not vulnerable to this defect as listed in the complete advisory, which is available at: <http://www.cisco.com/warp/public/707/ioshttpserverquery-pub.shtml>. You are strongly encouraged to read the complete advisory.

Caveats

Caveats describe unexpected behavior in Cisco IOS software releases. Severity 1 caveats are the most serious caveats; severity 2 caveats are less serious. All caveats in Cisco IOS Release 12.1 and Cisco IOS Release 12.1 T are also in Cisco IOS Release 12.1(3)XP4.

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 12.1 T*. These documents list severity 1 and 2 caveats and are located on Cisco.com and the Documentation CD-ROM.

**Note**

If you have an account with Cisco.com, you can also use the Bug Toolkit to find select caveats of any severity. To reach the Bug Toolkit, log in to Cisco.com and click **Service & Support: Technical Assistance Center: Tool Index: Bug Toolkit**. Another option is to go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.

Resolved Caveats—Release 12.1(3)XP4

This section describes possibly unexpected behavior by software releases prior to Release 12.1(3)XP4 that have been resolved in Release 12.1(3)XP4 and above.

Management

CSCdw65903

An error can occur with management protocol processing. Please use the following URL for further information:

<http://www.cisco.com/cgi-bin/bugtool/onebug.pl?bugid=CSCdw65903>

Open Caveats—Release 12.1(3)XP3

This section describes possibly unexpected behavior by Release 12.1(3)XP3.

Miscellaneous

CSCds04747

Connection setup improvements.

CSCds32217

D-write community string readable with read-only community, Cisco IOS.

Resolved Caveats—Release 12.1(3)XP2

This section describes possibly unexpected behavior by software releases prior to Release 12.1(3)XP2 that have been resolved in Release 12.1(3)XP2 and above.

Miscellaneous

CSCds05811

If secondary IP addresses are configured on either an Ethernet or FastEthernet interface and the running-config is saved to NVRAM, when the router is reloaded the secondary IP addresses disappear from the configuration. This caveat is identical to the caveats: CSCdr51651, CSCdr72866, CSCdr72868, and CSCdr77724, as well as cases A445655, A519050, and A466616. The problem was originally found in Release 12.1(2)T. This caveat is fixed in Cisco IOS Release 12.1(3)XP3.

Open Caveats—Release 12.1(3)XP1

This section describes possibly unexpected behavior by Release 12.1(3)XP1.

Miscellaneous

CSCds52865

Although the old Alcatel microcode 2.58 was compatible with the ADI-based Cisco line card, Alcatel microcode 3.6.66 is not compatible with the Cisco 4xDMT ADI based line card. To work around this problem for SOHO 70 series routers, upgrade to Cisco IOS release 12.1(3)XP1. Note that Cisco IOS release 12.1(3)XP1 contains both 2.58 and 3.6.66 microcode versions, but only uses 2.58 microcode for ADSL over ISDN. After upgrading your software, configure the command **dsl operating-mode ansi-dmt** for the ATM0 interface, which allows the router to function with the DMT card of the Cisco DSLAM.

CSCds52870

A SOHO 77 router is not compatible with a Cisco DSLAM using the ATUC-1-4DMT line card.

Related Documentation

The following sections describe the documentation available for the Cisco SOHO series routers. Typically, these documents consist of hardware and software installation guides, Cisco IOS configuration 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 the documents listed in the following sections:

- Release-Specific Documents
- Platform-Specific Documents
- Feature Modules
- Cisco IOS Software Documentation Set

Release-Specific Documents

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

- *Release Notes for Cisco IOS Release 12.1*

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: 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: Product Bulletins

- Caveats for Cisco IOS Release 12.1 and 12.1 T

As a supplement to the caveats listed in the “Caveats” section on page 6 section in these release notes, see the *Caveats for Cisco IOS Release 12.1* and *Caveats for Cisco IOS Release 12.1 T* documents, which contain caveats applicable to all platforms for all maintenance releases of IOS Releases 12.1 and 12.1 T.

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: 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 also use the Bug Toolkit to find select caveats of any severity. To reach the Bug Toolkit, log in to Cisco.com and click **Service & Support: Technical Assistance Center: Tool Index: Bug Toolkit**. Another option is to go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl.

Platform-Specific Documents

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

- *Cisco SOHO Series - Release Notes for Release 12.1(3)XP*
- *Configuration Note for Cisco SOHO Series Routers*
- *Regulatory Compliance and Safety Information for Cisco SOHO 76 and 77 Routers*

On Cisco.com at:

Technical Documents: Documentation Home Page: Access Servers and Access Routers: Fixed Configuration Access Routers: Cisco SOHO Series Routers

On the Documentation CD-ROM at:

Cisco Product Documentation: Access Servers and Access Routers: Fixed Configuration Access Routers: Cisco SOHO Series Routers

Feature Modules

Feature modules describe new features supported by Release 12.1(3)XP4 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: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1: New Feature Documentation: New Features in 12.1-Based Limited Lifetime Releases: New Features in 12.1X Releases

On the Documentation CD-ROM at:

Cisco Product Documentation: Cisco IOS Software Configuration: Cisco IOS Release 12.1: New Feature Documentation: New Features in 12.1-Based Limited Lifetime Releases: New Features in 12.1X Releases

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 that are shipped with your order in electronic form on the Documentation CD-ROM—unless you specifically ordered printed versions.

Documentation Modules

Each module in the Cisco IOS documentation set consists of two types of books: a configuration guide and a corresponding command reference. Chapters in a configuration guide describe protocols, configuration tasks, 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.

The Cisco IOS software documentation set is available on Cisco.com and on the Documentation CD-ROM.

On Cisco.com at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: 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 4 describes the contents of the Cisco IOS Release 12.1 software documentation set, which is available in both electronic and printed form.



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 at:

Technical Documents: Documentation Home Page: Cisco IOS Software Configuration: Cisco IOS Release 12.1

On the Documentation CD-ROM at:

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

Table 4 Cisco IOS Software Release 12.1 Documentation Set

Books	Major Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Configuration Fundamentals Configuration Guide</i> • <i>Cisco IOS Configuration Fundamentals Command Reference</i> 	Configuration Fundamentals Overview Cisco IOS User Interfaces Cisco IOS File Management Cisco IOS System Management Cisco IOS User Interfaces Commands Cisco IOS File Management Commands Cisco IOS System Management Commands
<ul style="list-style-type: none"> • <i>Cisco IOS Bridging and IBM Networking Configuration Guide</i> • <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume I</i> • <i>Cisco IOS Bridging and IBM Networking Command Reference, Volume II</i> 	Using Cisco IOS Software Overview of SNA Internetworking Bridging IBM Networking
<ul style="list-style-type: none"> • <i>Cisco IOS Dial Services Configuration Guide: Terminal Services</i> • <i>Cisco IOS Dial Services Configuration Guide: Network Services</i> • <i>Cisco IOS Dial Services Command Reference</i> 	Preparing for Dial Access Modem Configuration and Management ISDN and Signalling Configuration PPP Configuration Dial-on-Demand Routing Configuration Dial-Backup Configuration Terminal Service Configuration Large-Scale Dial Solutions Cost-Control Solutions Virtual Private Networks X.25 on ISDN Solutions Telco Solutions Dial-Related Addressing Services Interworking Dial Access Scenarios
<ul style="list-style-type: none"> • <i>Cisco IOS Interface Configuration Guide</i> • <i>Cisco IOS Interface Command Reference</i> 	Interface Configuration Overview Configuring LAN Interfaces Configuring Serial Interfaces Configuring Logical Interfaces
<ul style="list-style-type: none"> • <i>Cisco IOS IP and IP Routing Configuration Guide</i> • <i>Cisco IOS IP and IP Routing Command Reference</i> 	IP Addressing and Services IP Routing Protocols IP Multicast
<ul style="list-style-type: none"> • <i>Cisco IOS AppleTalk and Novell IPX Configuration Guide</i> • <i>Cisco IOS AppleTalk and Novell IPX Command Reference</i> 	AppleTalk and Novell IPX Overview Configuring AppleTalk Configuring Novell IPX
<ul style="list-style-type: none"> • <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Configuration Guide</i> • <i>Cisco IOS Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Command Reference</i> 	Apollo Domain, Banyan VINES, DECnet, ISO CLNS, and XNS Overview Configuring Apollo Domain Configuring Banyan VINES Configuring DECnet Configuring ISO CLNS Configuring XNS

Table 4 Cisco IOS Software Release 12.1 Documentation Set (continued)

Books	Major Topics
<ul style="list-style-type: none"> • <i>Cisco IOS Multiservice Applications Configuration Guide</i> • <i>Cisco IOS Multiservice Applications Command Reference</i> 	Multiservice Applications Overview Voice Video Broadband
<ul style="list-style-type: none"> • <i>Cisco IOS Quality of Service Solutions Configuration Guide</i> • <i>Cisco IOS Quality of Service Solutions Command Reference</i> 	Quality of Service Overview Classification Congestion Management Congestion Avoidance Policing and Shaping Signalling Link Efficiency Mechanisms Quality of Service Solutions
<ul style="list-style-type: none"> • <i>Cisco IOS Security Configuration Guide</i> • <i>Cisco IOS Security Command Reference</i> 	Security Overview Authentication, Authorization, and Accounting (AAA) Security Server Protocols Traffic Filtering and Firewalls IP Security and Encryption Other Security Features
<ul style="list-style-type: none"> • <i>Cisco IOS Switching Services Configuration Guide</i> • <i>Cisco IOS Switching Services Command Reference</i> 	Cisco IOS Switching Services Overview Cisco IOS Switching Paths Cisco Express Forwarding NetFlow Switching Multiprotocol Label Switching Multilayer Switching Multicast Distributed Switching Virtual LANs LAN Emulation
<ul style="list-style-type: none"> • <i>Cisco IOS Wide-Area Networking Configuration Guide</i> • <i>Cisco IOS Wide-Area Networking Command Reference</i> 	Wide-Area Networking Overview Configuring ATM Configuring Frame Relay Configuring Frame Relay-ATM Interworking Configuring SMDS Configuring X.25 and LAPB
<ul style="list-style-type: none"> • <i>Cisco IOS Configuration Guide Master Index</i> • <i>Cisco IOS Command Reference Master Index</i> • <i>Cisco IOS Debug Command Reference</i> • <i>Cisco IOS Dial Services Quick Configuration Guide</i> • <i>Cisco IOS Software System Error Messages</i> • <i>New Features in 12.1-Based Limited Lifetime Releases</i> • <i>New Features in Release 12.1 T</i> • Release Notes (Release note and caveat documentation for 12.1-based releases and various platforms) 	

Obtaining Documentation

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <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. Therefore, it is probably more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Registered Cisco.com users can order the Documentation CD-ROM and other Cisco Product documentation through our online Subscription Services at <http://www.cisco.com/cgi-bin/subcat/kaojump.cgi>.

Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco's corporate headquarters (California, USA) at 408 526-4000 or, in North America, call 800 553-NETS (6387).

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Warranty or maintenance contract customers can use the Technical Assistance Center. All customers can submit technical feedback on Cisco documentation using the web, e-mail, a self-addressed stamped response card included in many printed documents, or by sending mail to Cisco.

Cisco.com

Cisco continues to revolutionize how business is done on the Internet. 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's broad range of features and services helps customers and partners to streamline business processes and improve productivity. Through Cisco.com, you will find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online support services, 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 may order products, check on the status of an order and view benefits specific to their relationships with Cisco.

You can access Cisco.com in the following ways:

- WWW: www.cisco.com
- Telnet: cco.cisco.com
- Modem using standard connection rates and the following terminal settings: VT100 emulation; 8 data bits; no parity; and 1 stop bit.
 - From North America, call 408 526-8070
 - From Europe, call 33 1 64 46 40 82

You can e-mail questions about using Cisco.com to cco-team@cisco.com.

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to warranty or maintenance contract customers who need technical assistance with a Cisco product that is under warranty or covered by a maintenance contract.

To display the TAC web site that includes links to technical support information and software upgrades and for requesting TAC support, use www.cisco.com/techsupport.

To contact by e-mail, use one of the following:

Language	E-mail Address
English	tac@cisco.com
Hanzi (Chinese)	chinese-tac@cisco.com
Kanji (Japanese)	japan-tac@cisco.com
Hangul (Korean)	korea-tac@cisco.com
Spanish	tac@cisco.com
Thai	thai-tac@cisco.com

In North America, TAC can be reached at 800 553-2447 or 408 526-7209. For other telephone numbers and TAC e-mail addresses worldwide, consult the following web site:
<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>.

Software Configuration Tips on the Cisco Technical Assistance Center Home Page

If you have a Cisco.com log-in account, you can access the following URL, which contains links and tips on configuring your Cisco products:

http://www.cisco.com/public/technotes/tech_sw.html

This URL is subject to change without notice. If it changes, point your Web browser to Cisco.com, press **Login**, and click on this path: **Technical Assistance Center: Technical Tips**.

The following sections are provided from the Technical Tips page:

- Access Dial Cookbook—Contains common configurations or recipes for configuring various access routes and dial technologies.
- Field Notices—Notifies you of any critical issues regarding Cisco products and includes problem descriptions, safety or security issues, and hardware defects.
- Frequently Asked Questions—Describes the most frequently asked technical questions about Cisco hardware and software.
- Hardware—Provides technical tips related to specific hardware platforms.
- Hot Tips—Describes popular tips and hints gathered from the Cisco Technical Assistance Center (TAC). Most of these documents are available from the TAC Fax-on-demand service. To reach Fax-on-demand and receive documents at your fax machine from the United States, call 888-50-CISCO (888-502-4726). From other areas, call 650-596-4408.
- Internetworking Features—Lists tips on using Cisco IOS software features and services.
- Sample Configurations—Provides actual configuration examples that are complete with topology and annotations.

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.

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Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate and value your comments.

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