



Release Notes for Cisco IP Communicator Release 1.1(1)

Revised: July 20, 2009

These release notes provide the following information:

- [Documentation Roadmap, page 1](#)
- [Cisco CallManager Versions Supported, page 2](#)
- [Important Notes, page 2](#)
- [Audio Tuning and Sound Card Information, page 3](#)
- [Choosing Headsets and Handsets for Cisco IP Communicator, page 5](#)
- [Information Not Found in the User Guide, page 6](#)
- [Open Caveats for Cisco IP Communicator 1.1\(1\), page 7](#)
- [Obtaining Documentation, page 9](#)
- [Documentation Feedback, page 10](#)
- [Obtaining Technical Assistance, page 10](#)
- [Obtaining Additional Publications and Information, page 12](#)

Documentation Roadmap

For detailed information about administering or using Cisco IP Communicator 1.1(1), refer to the following documentation references.

Cisco IP Communicator

- *Cisco IP Communicator Administrator Guide (1.1)*
- *Cisco IP Communicator User Guide (1.1)*

These documents are available from the following location on Cisco.com:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/index.htm



Americas Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Choose a language and product link to access documentation from this website. The User Guide is available from the Cisco IP Communicator program folder, as well.

Cisco CallManager Administration

- *Cisco CallManager Administration Guide*
- *Cisco CallManager System Guide*
- *Cisco CallManager Serviceability Administration Guide*
- *Cisco CallManager Serviceability System Guide*
- *Bulk Administration Tool User Guide for Cisco CallManager*
- *Cisco CallManager Features and Services Guide*

These documents are available under Cisco CallManager version links on Cisco.com:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/index.htm

Cisco CallManager Versions Supported

Cisco IP Communicator version 1.1(1) supports the following Cisco CallManager releases:

- Cisco CallManager 3.3: Version 3.3(3) Service Release 3 or later, including 3.3(4)
- Cisco CallManager 4.0: Version 4.0(1) Service Release 2 or later, with feature support the same as in the 3.3(x) release



Note

Survivable Remote Site Telephony version 3.1 (or earlier) and Cisco CallManager Express version 3.1 (or earlier) do not support Cisco IP Communicator.

Important Notes

This section contains important information about Cisco IP Communicator 1.1(1).

Installing a Hotfix for USB Audio Devices



Warning

Important! If you are using Cisco IP Communicator with a USB audio device, you might need to install the specified Microsoft hotfix to avoid system crashes.

You must install a Microsoft Windows hotfix if you use Cisco IP Communicator 1.1(1) with *both* of the following:

- Windows 2000 Service Pack 3 or greater
- a USB audio device

To get the hotfix for your locale, access the file called cipc-Admin-ffr.1-1-1.zip from the software download website:

<http://www.cisco.com/cgi-bin/tablebuild.pl/ip-comm>

Unzip the W2KUSBHotfix.zip file to access the appropriate locale folder, then run the Windows2000-KB832339-x86-ENU.EXE file.

Generating and Retrieving Error Reports

For troubleshooting purposes, you should advise end-users to enable logging immediately after installation and tell them how to generate an error report.

Here are detailed instructions that you can pass on to end-users:

- After installing Cisco IP Communicator, check the “Enable Logging” check box in the User tab of the Preferences dialog (**right-click > User > Troubleshooting > Enable Logging**). Enabling logging allows you to provide error reports with the highest and most useful level of detail.
- Always generate an error report when you experience problems with Cisco IP Communicator. Cisco Technical Support will use the error report to assist in troubleshooting.
- Generate the report by running the Error Reporting Tool (**Start > Programs > Cisco IP Communicator > Error Reporting**). Click **OK** when prompted.
- You can retrieve the error report from one of these locations:
 - If your computer uses Microsoft Windows XP: **Start > My Documents > Cisco IP Communicator**
 - If your computer uses Microsoft Windows 2000: **Start > Documents > My Documents > Cisco IP Communicator**

Build Versions in About Window Might Vary

Build version numbers listed in the Cisco IP Communicator 1.1(1) About window might vary by software component. For example, the versions listed for Sfb.dll, Cpmt.sys, and CdpPacket.sys might not match. This is a normal outcome of installing or upgrading the application and does not indicate a problem with the installation or upgrade process.

To view build versions for software components, choose **right-click > About Cisco IP Communicator**. Build versions are listed in the right-hand column.

Audio Tuning and Sound Card Information

This section includes the following topics:

- [Achieving Optimal Tuning While Using the Audio Tuning Wizard, page 3](#)
- [Bluetooth Devices, Jittery Audio, and Latency Optimization, page 4](#)

Achieving Optimal Tuning While Using the Audio Tuning Wizard

You can tune Cisco IP Communicator output volume using two controls in the Audio Tuning Wizard:

- A master volume slider—Affects all applications
- A wave volume slider—Affects most applications, including Cisco IP Communicator

Common Tuning Mistakes

Users often set the volume levels high initially from the master and/or wave sliders in the Audio Tuning Wizard, then later reduce the levels using Microsoft Windows volume controls or laptop sound keys because other applications sound too loud. When they subsequently discover that Cisco IP Communicator sounds too soft, users employ the volume button on the main Cisco IP Communicator interface to sharply increase the call volume.

You should be aware that a high volume setting in the application can cause users' voices to sound distorted and can cause users to experience varying volume levels (see [CSCed76879](#) in [Table 1](#).)

Recommended Tuning Procedure

The recommended course of action is to use the Audio Tuning Wizard dialog to accomplish all of Cisco IP Communicator's volume level adjustments by following these guidelines:

- Adjust the master volume slider first. Since this setting affects all applications that play sound, you should test the setting against other applications (such as Microsoft Windows Media Player and RealPlayer) to ensure that volume levels are appropriate.
- Adjust the wave volume slider to a comfortable level for phone calls after adjusting the master volume.

Additionally, users should avoid permanently repositioning the volume slider on the Cisco IP Communicator main interface so that it is higher than the mid-range area. (See [CSCed76879](#) in [Table 1](#), below.)

If the user changes volume settings from Microsoft Windows, the Audio Tuning Wizard should be run again (according the above guidelines) to re-tune the master and wave volume settings.

Bluetooth Devices, Jittery Audio, and Latency Optimization

We have found that various sound cards have differing capabilities. Some are good for low latency audio, which is required for telephone calls, while others (including common Bluetooth devices) cannot be used in very low latency modes. The resulting audio sounds consistently jittery, with frequent pops and clicks.

Testing for Latency Optimization

To test which latency setting is best for your particular set of audio devices (USB headsets, USB handsets, and/or sound cards), use the following procedure to modify Cisco IP Communicator's audio parameters.



Note

In general, it is recommended that you test the .reg file with the lowest settings first and continue to the next .reg file, if needed. However, we have found that a Bluetooth audio device with Widcomm PC drivers requires settings that are no lower than those in the HighDelay.reg or VeryHighDelay.reg file.

Procedure

- Step 1** In the Cisco IP Communicator program folder, double-click on one of the following .reg files:
- LowDelay.reg (Lowest latency, default setting)
 - MediumDelay.reg
 - HighDelay.reg
 - VeryHighDelay.reg (Highest Latency)

- Step 2** When prompted, confirm that you wish to import the settings into your Microsoft Windows registry.
- Step 3** Make a test phone call and verify that the audio sounds good to you and to the other party. If you hear distortion, audio dropouts, or robotic sound, proceed to the next file on the list and repeat the previous steps.
-

Use this procedure if you are having difficulty with an audio device that sounds less than satisfactory with Cisco IP Communicator, but performs well with other applications.

Choosing Headsets and Handsets for Cisco IP Communicator

While Cisco does perform some internal testing of third-party headsets and handsets for Cisco IP Communicator, we do not certify or support products from other vendors. Because of the inherent environmental and hardware inconsistencies in the locations in which Cisco IP Communicator is deployed, there is no single best solution that is optimal for all environments. Cisco recommends that customers test the headsets and handsets that work best in their environment before deploying a large number of units in their network.

The primary reason that a headset or handset would be inappropriate for an installation would be an audible hum (either a hum heard by the remote party or by both the remote party and the Cisco IP Communicator user). In some cases, a hum experienced by a user plugged directly into the PC USB port may be reduced or eliminated by using a powered USB hub.

Furthermore, the mechanics or electronics of some headsets cause remote parties to hear their own voices echo back to them when they speak to Cisco IP Communicator users, who will not be aware of the echo.

Finally, some analog headsets do not match the electrical characteristics for which some sound cards are designed. The microphones on such headsets are frequently too sensitive, even when the input levels in Cisco IP Communicator are reduced to their lowest values; the users of such headsets will sound distorted to remote parties.

For all of these reasons, it is important not only to ask Cisco IP Communicator users whether a particular headset sounds good to them, but also whether remote parties believe that Cisco IP Communicator users sound good with the headset.

Testing performed in the Cisco Labs has shown that the Plantronics DSP 300 and Plantronics DSP 400 have performed well with Cisco IP Communicator, but it remains the customer's responsibility to test in their environment.

For your reference, other headset and handset vendors include:

- Actiontec—www.actiontec.com
- Clarisys—www.clarisys.net
- CommuniTech—www.communitech.com
- Danacom—www.danacomusa.com
- Eutectics—www.eutecticsinc.com
- GNNetcom—www.gnnnetcom.com
- Plantronics—www.plantronics.com
- VXI—www.vxicorp.com

Information Not Found in the User Guide

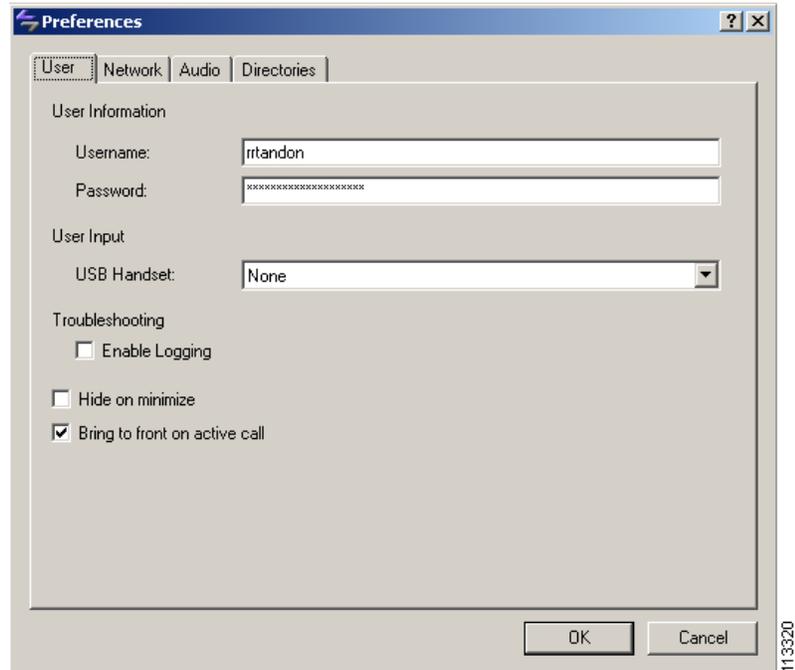
This section contains information about Cisco IP Communicator 1.1(1) that is not addressed in the current *Cisco IP Communicator User Guide*. Cisco suggests that you provide this information to end-users.

Bringing an Active Call to the Front

The “Bring to front on active call” check box is accessible from the Cisco IP Communicator interface (**right-click** > **Preferences** > **User**), as shown in [Figure 1](#).

When enabled, this feature will bring the application to the top of all other applications when an incoming call is received. If disabled, the application will not surface when an incoming call is received and the only indication of the incoming call might be the ringer sound.

Figure 1 Cisco IP Communicator User Preferences



Hiding the Minimized Application Icon

The “Hide on minimize” check box is available from the Cisco IP Communicator interface (**right-click** > **Preferences** > **User**), as shown in [Figure 1](#).

When this feature is enabled and the user minimizes the application, Cisco IP Communicator will *not* appear as a toolbar button, but does appear in the system icon tray. Double-click on the icon in the system tray to restore the application.

Using WebDialer and Extension Mobility

Running Cisco IP Communicator 1.1(1) on Cisco CallManager 3.3(4) or later allows users to access the Cisco Extension Mobility and WebDialer features.

Users can find instructions online in *Customizing Your Cisco IP Phone on the Web*:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/english/ipp7960/usopt.pdf

Administrative information about these features is available in Cisco CallManager documentation.

Searching for Personal Numbers with Quick Search

End-users should note that only those phone numbers entered in the “Work” field in the Personal Address Book service will be displayed in Quick Search results. Home and mobile phone numbers will not be displayed.

Where to Find Error Reports

The Error Reporting Tool saves data in the following locations:

- On computers using Microsoft Windows XP: Start > My Documents > Cisco IP Communicator
- On computers using Microsoft Windows 2000: Start > Documents > My Documents > Cisco IP Communicator



Note

The paths described above will not be visible until the user creates an error report.

It is important that end-users know how to use the Error Reporting Tool to capture information that can assist in troubleshooting, and that they enable logging after installation. For a summary of what to tell end-users, see the “[Generating and Retrieving Error Reports](#)” section on page 3.

Online Help Access from Right-Click Menu

Users can access the entire content of the *Cisco IP Communicator User Guide* in an online help format by choosing **right-click > Help**.



Note

The *Cisco IP Communicator User Guide* erroneously describes the right-click menu item as **User Guide**.

From the online help window, users can choose **View PDF**. A PDF version is also available from the Cisco IP Communicator program folder.

Open Caveats for Cisco IP Communicator 1.1(1)

Table 1 describes open issues for Cisco IP Communicator 1.1(1).



Note

If you have an account with Cisco.com (Cisco Connection Online), you can use the Bug Toolkit to find caveats of any severity for any release. To access the Bug Toolkit, log on to:
http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl

Table 1 **Open Caveats for Cisco IP Communicator 1.1(1)**

Identifier	Headline
CSCed76879	AUDIO: Remote party hears distorted audio or varying volume level. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCed76879
CSCed21257	AUDIO: Poor audio using VPN over dial-up. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCed21257
CSCec58049	AUDIO: Some VXi headsets cause the remote party to hear echo. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCec58049
CSCec63499	AUDIO: Some USB audio devices exhibit hum when connected to laptops. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCec63499
CSCee00053	AUDIO: Changing USB headsets/handsets while running Cisco VT Advantage shows error. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCee00053
CSCin54928	CALL FEATURE: Call park message lingers even if the call is unparked promptly. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCin54928
CSCed61437	CALL FEATURE: DTMF digits duplicated in MeetingPlace sessions. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCed61437
CSCin53218	CALL FEATURE: Auto-line select feature does not work. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCin53218
CSCed58910	CALL FEATURE: "CM Down Feature Disable" error appears in status line. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCed58910
CSCec76357	CDP: Disabling the driver on a net adapter results in cdpOpen failure. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCec76357
CSCed62953	CDP: Communicator is not discovered by Cisco Emergency Responder. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCed62953
CSCed21364	DIRECTORY: Directory searches fail to find users created via Netscape Directory Server. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCed21364
CSCec88550	INSTALL: Performing silent installations automatically reboots PC. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCec88550
CSCed75555	INSTALL: Cannot remove or uninstall if Cisco VT Advantage is installed. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCed75555
CSCed91133	INSTALL/AUTOUPDATE: Cisco Security Agent displays warning. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCed91133

Table 1 **Open Caveats for Cisco IP Communicator 1.1(1) (Continued)**

Identifier	Headline
CSCed58787	PREFERENCES: Changing TFTP address causes application to crash. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCed58787
CSCec79171	SERVICES: The back button on the Cisco Conference Connection service is not working. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCec79171
CSCeb55414	STARTUP: Communicator does not support Terminal Services. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeb55414
CSCed76382	STARTUP: Crash during startup or when resuming from standby mode. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCed76382
CSCec23649	USER INTERFACE: Clarisys i750 sends a duplicate digits when using # keys. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCec23649
CSCin50824	USER INTERFACE: Some keys or buttons are not supported on USB handsets. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCin50824
CSCee07575	USER INTERFACE: “USB Controller Bandwidth Exceeded” error message received while using Communicator. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCee07575
CSCeb55433	USER INTERFACE: Clicking on the scroll bar does not work. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCeb55433
CSCin55830	USER INTERFACE: Dialing from a directory when a call is ringing answers the call. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCin55830
CSCec35225	USER INTERFACE: No warning about losing active calls on PC shutdown. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCec35225
CSCec77378	USER INTERFACE: Changing skins while mute is enabled misdraws skin. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCec77378
CSCec78626	USER INTERFACE: Communicator does not display time using CallManager time zone. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCec78626
CSCec85859	USER INTERFACE: Keyboard input behaves as though control key is held. http://www.cisco.com/cgi-bin/Support/Bugtool/onebug.pl?bugid=CSCec85859

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain 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

Ordering Documentation

You can find instructions for ordering documentation at this URL:

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 Ordering tool:
<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 about technical documentation to 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.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Go to this URL to visit the company store:
<http://www.cisco.com/go/marketplace/>
- 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://cisco.com/univercd/cc/td/doc/pcat/>
- *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/ipj>
- 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>

This document is to be used in conjunction with the documents listed in the [Documentation Roadmap](#) section.

CCVP, the Cisco logo, and Welcome to the Human Network are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn is a service mark of Cisco Systems, Inc.; and Access Registrar, Aironet, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, iQuick Study, LightStream, Linksys, MeetingPlace, MGX, Networkers, Networking Academy, Network Registrar, PIX, ProConnect, ScriptShare, SMARTnet, StackWise, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0711R)

Copyright © 2004 Cisco Systems, Inc. All rights reserved.