



# Release Notes for Cisco Customer Response Applications 3.0

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These release notes are for use with Cisco Customer Response Applications (Cisco CRA) Release 3.0 and Cisco CallManager Extended Services.

These Release Notes may be updated occasionally with new information. For the latest version of these Release Notes, refer to this URL:

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## Note

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Effective with Release 3.0, Cisco Customer Response Applications (CRA) has been renamed Cisco Customer Response Solutions (CRS). The Cisco website and packaging materials have been updated to reflect the new name, but the user interface and documentation has not.

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## **What's New in Cisco CRA Release 3.0**

Cisco CRA Release 3.0 includes the following new features:

- **Improved Administration**—Provides an interface with the same “look and feel” as Cisco CallManager Administrator. The CRA 3.0 interface includes a menu bar that appears on all CRA web pages, a variety of enhancements to improve navigation, and enhanced management for prompts, scripts, and applications.
- **ICD Skills-Based Agents**—Allows an agent to be independent of a particular resource group. You can route a caller with specific needs to a resource (an agent) with the skills needed to handle the call. With Skills-Based Routing (SBR), skill levels are based on an agent’s knowledge of a particular subject. You can assign multiple skills to each resource.

- Enhanced Reporting—Real Time Reporting provides detailed information about contacts, applications, tasks, sessions and database usage. Historical Reporting provides detailed information about the call activities of your CRA system. With Historical Reporting, you can access historical data, view, print, save, sort and filter reports, send scheduled reports to a file or printer, and export reports in a variety of formats, including PDF, RTF, and XLS.
- Nuance Automated Speech Recognition (ASR)—Allows callers to move through menus and to select menu options by speaking words or phrases instead of pressing keys on a touch-tone telephone.
- Nuance Text-to-Speech (TTS)—Converts plain text (UNICODE) files through the Nuance TTS engine to speech prompts.
- Support for Internationalization—Allows the CRA system to be tailored to the requirements of different languages through localization. Prompts can be played back in different languages and can be generated based on syntax requirements, currency and date conventions, and other language-specific requirements and rules.
- Voice eXtensible Markup Language (VXML)—Integrated VXML makes it possible to create audio dialogs that feature synthesized speech, digitized audio, recognition of spoken and DTMF key input, recording of spoken input, telephony, and mixed-initiative conversations.
- Improved Media Usage—More ports per CRA server are available. In addition, three choices for media types are available:
  - Cisco Media Termination (CMT)—DTMF digits input.
  - Nuance Automatic Speech Recognition (ASR)—Spoken input and DTMF digits.
  - Media-less calls—Applications that require neither DTMF nor spoken input, such as e911 calls and simple queueing.
- Grammars—Allows matching of input from callers (spoken words or DTMF digits) with a set of predefined rules.
- Contact Neutrality—Scripts can be written to generically handle multiple functions so that the same scripts can be used for calls, e-mails, and HTTP contacts.
- Enhanced Steps and Prompting—Several new and enhanced steps are available.

- Enhanced Variables and Expressions—Greater support for variables and expressions.
- Improved Script Interruption—A script can now be interrupted between steps. In addition, media steps can be configured to be interruptible while they are playing. Subflows can also be marked to disable interruptions, thus providing an uninterruptible sequence of operations.
- Session Management—Sessions track contacts and related information as the contacts move through the CRA system.
- Improved Error Handling—Errors in an application can be handled on various levels: error branches, exceptions, or default scripts.
- Converting Existing Scripts to CRA 3.0—Scripts created prior to CRA 3.0 will continue to function without the need for conversion when executed by the CRA 3.0 Engine. If you wish to enhance existing scripts, you will have the option to convert them, if required, when loading them in the CRA Editor.

## Features Enabled With Each Product Key

The following table lists the Cisco CRA features that are enabled by each Cisco CRA product key.

Feature	IP IVR <sup>1</sup>	IP ICD <sup>2</sup> Standard	IP ICD Enhanced	IP ICD Enhanced/ CTI <sup>3</sup> Option	IP-QM <sup>4</sup>	Extended Services
Telephony Apps	X	X <sup>5</sup>	X <sup>5</sup>	X <sup>5</sup>	X <sup>6</sup>	
ICD <sup>7</sup>		X	X	X		
Queue Manager	X				X	
Extension Mobility	X <sup>8</sup>			X <sup>8</sup>		X
Auto Attendant	X <sup>8</sup>			X <sup>8</sup>		X
Multiple Language Support	X	X	X	X	X	
JTAPI <sup>9</sup>	X	X	X	X	X	X

Feature	IP IVR <sup>1</sup>	IP ICD <sup>2</sup> Standard	IP ICD Enhanced	IP ICD Enhanced/ CTI <sup>3</sup> Option	IP-QM <sup>4</sup>	Extended Services
HTTP <sup>10</sup>	X			X		
Email	X			X		
Database	X			X		
Cisco Media Termination	X	X	X	X	X	X
ASR <sup>11</sup>	X <sup>12</sup>		X <sup>12</sup>	X <sup>12</sup>	X <sup>12</sup>	
TTS <sup>13</sup>	X <sup>12</sup>		X <sup>12</sup>	X <sup>12</sup>	X <sup>12</sup>	
Voice Browser	X <sup>14</sup>		X <sup>14</sup>	X <sup>14</sup>	X <sup>14</sup>	
Real-Time Reporting	X	X	X	X	X	X
Historical Reporting	X <sup>15</sup>	X <sup>16</sup>	X <sup>17</sup>	X <sup>17</sup>	X <sup>15</sup>	
Editor	X <sup>18</sup>	X <sup>19</sup>	X <sup>20</sup>	X <sup>21</sup>	X <sup>22</sup>	

1. IP IVR = Cisco IP Interactive Voice Response
2. IP ICD = Cisco IP Integrated Content Distribution
3. CTI = Computer Telephony Interface
4. IP-QM = IP Queue Manager
5. Cisco Intelligent Contact Manager (ICM) (Translation routes and Post-routes can not be configured)
6. Only ICM (Translation routes and Post-routes), Busy, and Ring-No-Answer (RNA) applications can be configured
7. ICD = Integrated Contact Distribution
8. Sample Scripts Included
9. JTAPI = Java Telephony Application Programming Interface
10. For Extended Services, the HTTP subsystem and the ability to configure HTTP triggers is included for use with Extension Mobility.
11. ASR = Automatic Speech Recognition
12. Add-on Feature
13. TTS = Text-To-Speech
14. Only available if ASR option is purchased
15. Only IVR Reports
16. ICD Standard Historical Reporting Client can be purchased
17. ICD Enhanced Historical Reporting Client can be purchased
18. ICD Steps not included

19. Email, Http, DB, ICM and Java steps not included, and the Set Priority step is not included
20. Email, Http, DB, ICM and Java steps not included
21. ICM Steps not included
22. Email, Http, DB, User and ICD steps not included

## Documentation Roadmap

For information about the Cisco Customer Response Platform documentation, refer to *Documentation Overview for Cisco Customer Response Applications*.

For information about Cisco CallManager, refer to this URL:

[http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_callmg/3\\_2/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_2/index.htm)

For information about Cisco CallManager Extended Services, refer to *Cisco CallManager Extended Services Administrator's Guide*. This manual provides information about administering Cisco CallManager Extension Mobility and Cisco CallManager AutoAttendant. This manual is available at this URL:

[http://www.cisco.com/univercd/cc/td/doc/product/voice/serv\\_fea/ext\\_serv/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/serv_fea/ext_serv/index.htm)

## Additional Information Online

You can access information about Cisco CRA and related voice products online:

- Cisco Voice product documentation is available in online help and on the web at this URL:

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

- Cisco CRA Release 3.0 information is available at this URL:

<http://www.cisco.com/en/US/products/sw/custcosw/ps1846/ps4829/index.html>

- Online help is available from the Cisco CRA Administration web pages, the Cisco CRA Editor, Cisco Agent Desktop, Cisco Supervisor Desktop, Cisco Desktop Administrator, and Cisco CRA Historical Reports.

# Upgrading From CRA 2.x

If you are upgrading from CRA Release 2.x to CRA Release 3.0, perform the following steps.

**Caution**

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Upgrading from CRA Release 2.2(4) to CRA Release 3.0(1) is not supported. Upgrading from CRA Release 2.2(4) to CRA Release 3.0(2) or higher will be supported. Upgrading to CRA Release 3.0(1) from all released versions of CRA 2.x other than 2.2(4) is supported.

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**Procedure**

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- Step 1** Upgrade the operating system on your CRA server using the OS Upgrade CD included with your CRA system.
- For instructions, refer to this URL:  
[http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_callmg/3\\_2/install/upgrade/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_2/install/upgrade/index.htm)
- Step 2** Upgrade your Cisco CallManager software to Cisco CallManager Release 3.2.
- For instructions, refer to this URL:  
[http://www.cisco.com/univercd/cc/td/doc/product/voice/c\\_callmg/3\\_2/install/upgrade/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/voice/c_callmg/3_2/install/upgrade/index.htm)
- Step 3** Install CRA Release 3.0 on your CRA Server.
- For instructions, refer to the “Installing Cisco CRA 3.0” section in Chapter Chapter 3, “Installing Cisco CRA” in *Getting Started with Cisco Customer Response Applications*.
- Step 4** If you want to maintain existing profile information, use the LDAP conversion tool to convert configuration and Repository profiles.
- For instructions, refer to Appendix C, “Cisco CRA 2.x to 3.0 Profile Conversion” in *Getting Started with Cisco Customer Response Applications*.
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# Known Problems

Known problems are unexpected behaviors or defects in Cisco software releases. They are graded according to severity level. These Release Notes contain information for most severity levels 1, 2, and 3, and for some severity levels 4, 5, and 6.

You can search for known problems on the Cisco bug tracking system tool, called Bug Navigator II.

To access Bug Navigator II, perform one of the following actions:

- Enter the following URL in your web browser:  
<http://www.cisco.com/support/bugtools>
- Log in to Cisco Connection Online (CCO) and select **Service & Support > Technical Assistance Center > Tools > Software Bug Toolkit Bug Navigator II**

For information about issues relating to VoiceXML implementation, refer to Appendix B, “VoiceXML Implementation for Cisco Voice Browser,” in *Cisco Customer Response Applications Developer Guide*.

The following sections cover these problems:

- Automatic Speech Recognition (ASR) Known Problems, page 20
- Cisco CRA Administration Known Problems, page 22
- Cisco Automated Attendant Known Problems, page 24
- Cisco CRA Editor Known Problems, page 25
- Cisco CRA Engine Known Problems, page 26
- Cisco CRA Historical Reports Known Problems, page 27
- Cisco CRA Installation Known Problems, page 28
- Cisco CRA Serviceability Known Problems, page 31
- Cisco CRA Upgrade Known Problems, page 31
- Cisco Integrated Contact Distribution (ICD) Known Problems, page 32
- Media-Related Known Problems, page 43
- Text to Speech (TTS) Known Problems, page 44

## Automatic Speech Recognition (ASR) Known Problems

Table 1 ASR Known Problems

Bug ID	Summary	Explanation
CSCdv22497	The Nuance subsystem takes a long time to go into service.	<p>The following factors can cause the Nuance subsystem to take a long time to go into service. In this case, the system is working as expected.</p> <ul style="list-style-type: none"> <li>• Multiple languages installed for ASR.</li> <li>• A large Cisco CallManager user directory.</li> </ul> <p>You can configure the JTAPI triggers with a secondary Cisco Media Termination (CMT) media group (non-ASR) to allow calls to be received as CMT only until the ASR channels go into service.</p>
CSCdx39585	A prompt exception appears in the CRA Engine log file.	<p>A prompt exception containing the text <code>open port failed</code> appears in the CRA Engine log file. This error is generally caused when the CRA Engine is incorrectly shut down (for example, from the Windows Task Manager) while there are RTP ports in use.</p> <p>If this prompt exception appears, it is recommended that you reboot your CRA server.</p> <p>To prevent this problem, to stop the CRA Engine, choose <b>System &gt; Engine</b> from the CRA Administration menu bar and then click <b>Stop Engine</b>. Alternatively, you can use the Windows services console to stop the CRA Engine.</p>
CSCdx84527	The title of the Nuance Subsystem ASR Subsystem help web page is incorrect.	The title of the Nuance Subsystem ASR Subsystem help web page appears as “Provisioning the Subsystem.” This title should appear as “Provisioning Nuance ASR.” The contents of the help web page are correct.

**Table 1** ASR Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx89158	The ASR subsystem is out of service.	<p>When a speech server is disconnected briefly from the network and then reconnected, or when it is turned off briefly and then turned back on, the ASR subsystem may remain out of service.</p> <p>To prevent this problem, if the speech server is disconnected from the network or is turned off, do not reconnect the speech server or restart it until the ASR subsystem is out of service.</p> <p>If this problem does occur, stop and then restart the CRA Engine.</p>
CSCdx91725	A caller does not hear the expected prompt when using ASR.	<p>A caller may hear silence instead of the expected prompt in a script in the following situations. This problem only occurs when the call is routed to a media channel that is using ASR.</p> <ul style="list-style-type: none"> <li>• The caller is transferred with a consultative transfer to a Cisco Script Application.</li> <li>• While connected to a Cisco Script Application, the caller puts the call on hold and then takes the call off hold.</li> </ul>
CSCdy35922	Creating more ASR channels than licensed does not work.	<p>If you attempt to configure more ASR channels in one or more Nuance Dialog Control Groups than the number of licensed ASR channels on your system, the system will not create the ASR channels that exceed the number specified in the license. The system will create the ASR channels, up to the licensed limit, based on the order in which the system creates the Nuance Dialog Control Groups. The system will not notify you that the excess ASR channels were not created.</p> <p>To prevent this problem, ensure that the total number of ASR channels that you create across all Nuance Dialog Control Groups does not exceed the number of ASR channels than are licensed.</p>

## Cisco CRA Administration Known Problems

*Table 2 Cisco CRA Administration Known Problems*

Bug ID	Summary	Explanation
CSCdv04372	Configuring a Cisco Script Application fails.	<p>The CRA system displays <code>Null Pointer Exception</code> when you try to configure a Cisco Script Application. This situation occurs when the following conditions exist:</p> <ul style="list-style-type: none"> <li>The user prompt directory for your default locale (for example, <code>en_US</code>) does not exist but its parent directory (for example, <code>en</code>) does exist.</li> <li>The parent locale directory contains some user prompts.</li> </ul> <p>In this case, there will be no prompts available in the Prompt drop-down list on the Cisco Script Application web page, and the system will not be able to complete the configuration operation.</p> <p>To work around this problem, click <b>Edit</b> next to the Prompt field on the Cisco Script Application web page and enter the name of the prompt manually.</p>
CSCdv26511	The Database subsystem is in partial service when the CRA system is configured to use a Sybase database.	<p>If the Sybase datasource name that you enter in the CRA Administration Enterprise Database Subsystem Configuration web page does not match exactly the datasource name in the Windows ODBC DSN configuration window, the database connection will fail. As a result, the database will go into partial service.</p>
CSCdw68252	Some calls to the CRA system are aborted in an unspecified manner.	<p>If the RTP start port is not 32256, calls to the CRA system can be aborted in an unspecified manner.</p> <p>To work around this problem, from CRA Administration, choose <b>System &gt; System Parameters</b>. Enter 32256 in the RTP Start Port field, click <b>Update</b>, and then stop and then restart the CRA Engine.</p>

Table 2 Cisco CRA Administration Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx63226	An inaccurate message appears when you click <b>Associate CTI Ports</b> on the CRA Administration JTAPI Call Control Group Configuration web page.	<p>If you click <b>Associate CTI Ports</b> on the CRA Administration JTAPI Call Control Group Configuration web page when the CRA Engine is not running or when information in the CRA JTAPI Configuration web page is incorrect, the following incorrect message appears:</p> <p>Please make sure the engine is running or JTAPI provider is configured correctly before bringing up the CTI Ports page</p> <p>This message should appear as follows:</p> <p>Please make sure that the CRA Engine is running and that JTAPI provider is configured correctly before bringing up the CTI Ports page</p>
CSCdx72115	The <b>ICD Extension</b> radio button on the Cisco CallManager User Device Association web page is unavailable.	<p>When CRA is first installed, the <b>ICD Extension</b> radio button on the CallManager User Device Association web page is not available.</p> <p>To work around this problem, restart the IIS service on the Cisco CallManager server.</p>
CSCdx77677	CRA Administration does not allow you to associate more than 278 CTI ports with a CTI port group.	<p>The following limits exist for associating CTI ports with a CTI port group:</p> <ul style="list-style-type: none"> <li>• If the directory number of the CTI port contains 4 digits, the maximum number of CTI ports that can be associated with a CTI port group is 278.</li> <li>• If the directory number of the CTI port contains 5 digits, the maximum number of CTI ports that can be associated with a CTI port group is 217.</li> </ul> <p>To work around this problem, create more than one group of CTI ports and provision the JTAPI triggers accordingly. Each of the groups will be limited as described above.</p>

**Table 2** *Cisco CRA Administration Known Problems (continued)*

Bug ID	Summary	Explanation
CSCdx83646	Default values in the CRA Administration Directory Setup web page are incorrect.	<p>If you select Active Directory or Netscape Directory from the Server Type drop-down list on the CRA Administration Directory Setup web page, the default values displayed in other fields in this web page are incorrect.</p> <p>This problem occurs because the CRA system has no control over Active Directory or Netscape directory configuration.</p> <p>To work around this problem, manually change the default values to the correct ones based your Directory setup.</p>

## Cisco Automated Attendant Known Problems

**Table 3** *Cisco Automated Attendant Known Problems*

Bug ID	Summary	Explanation
CSCdv41060	The Name To User step does not support non-English characters.	<p>The Name To User step only supports the 26 character English alphabet.</p> <p>As a result, the Cisco Automated Attendant Dial-by-Name feature (and other applications that use the Name to User Step) accepts only English alphabet characters when using CMT.</p>

## Cisco CRA Editor Known Problems

*Table 4 Cisco CRA Editor Known Problems*

Bug ID	Summary	Explanation
CSCdv02936	The Search option throws an exception.	<p>If you are using the CRA Editor on a CRA server, click <b>Search</b>, receive a security warning regarding the <code>jvm7.tmp</code> file, and then click <b>No</b>, the system throws an exception.</p> <p>To work around this problem, click <b>Yes</b> in response to the security warning.</p>
CSCdx22344	A Grammar step unexpectedly goes to the Unsuccessful branch in a script.	<p>If you specify a Grammar tag with incorrect case in a Grammar step, the script will go to the Unsuccessful branch when it reaches this step. The Validate function will not detect this case mismatch.</p> <p>To avoid this problem, make sure to use the proper case in every instance.</p>
CSCdx71057	A new help web page does not appear when a help page is open.	<p>If you choose <b>Help</b> from a Step's Properties window and a help web page is already open, the newly-selected help web page will not appear.</p> <p>To work around this problem, close the existing help web page before opening a new one.</p>
CSCdx80139	A script that includes a Call Subflow step may cause an error.	<p>A script that includes a Call Subflow step may cause an error when it runs. This problem is caused because the CRA Editor occasionally appends a space to a variable that you choose from the Variables drop-down list in the Expression Editor. The script causes an error at runtime because the variable name that it references does not exist.</p> <p>To work around this problem, use the Expression Editor to manually remove the space at the end of the variable.</p>

## Cisco CRA Engine Known Problems

Table 5 Cisco CRA Engine Known Problems

Bug ID	Summary	Explanation
CSCdv09530	The Generated Prompt step does not accept a three-digit value.	<p>In some cases, application developers expect that the year format will be a three-digit number that is added to 1900. This behavior is consistent with the deprecated Date class, but the Generated Prompt step does not accept a three-digit value. The step follows the behavior defined by the java.util.Calendar class in the Java language and accepts the year in its full representation. For example, it expects 2002, not 102.</p> <p>To work around this problem, always use the four-digit year. If the year is derived from a format that provides a three-digit value, add it to 1900 before using it in the Generate Prompt step.</p>
CSCdw83058	Changing the host name or IP address causes problems.	<p>If you change the host name or IP address in the Application Engine Hostname field in the CRA Administration Engine web page, you must stop and then restart the CRA Engine. If you do not restart the CRA Engine after making this change, the CRA system may experience various problems.</p> <p><b>Note:</b> You should only change the host name or IP address if the host name or the IP address of the CRA server changes.</p>
CSCdx41660	The CRA Engine does not start when another process is using port 1099.	<p>If another process is using the CRA Engine default port, 1099, the CRA Engine will not start and the trace file will show <code>Port already in use</code>.</p> <p>To work around this problem, from the CRA Administration web page, choose <b>System &gt; Engine &gt; Engine Configuration</b> and enter a different port in the RMI Port Number field. Then stop and then restart the CRA Engine.</p>

**Table 5** *Cisco CRA Engine Known Problems (continued)*

Bug ID	Summary	Explanation
CSCdx66989	The CRA Engine may become briefly unresponsive.	Occasionally, the CRA Engine may respond slowly to incoming calls, HTTP requests, agent state changes, DTMF key input, and so on. This problem generally occurs when the CRA server is very busy processing calls or HTTP requests.
CSCdx76886	After a network failure, JTAPI subsystem is in partial service and callers hear a fast busy tone when calling a CTI route point.	This problem occurs because, after a Cisco CallManager failover and fallback, the CTI route points are not running.  To fix this problem, stop and then restart both the primary and backup Cisco CallManager servers.
CSCdy07533	The CRA Engine does not restart when a co-resident CRA server reboots.	On a server on which both CRA and Cisco CallManager are running, the CRA Engine will not start automatically when the server reboots if the DC Directory service has not started.  To work around this problem, determine why the DC Directory service is slow to start and correct any problems. Ensure that the DC Directory service has started, then start the CRA Engine by clicking <b>Start Engine</b> in the CRA Administration Engine web page.

## Cisco CRA Historical Reports Known Problems

**Table 6** *Cisco CRA Historical Reports Known Problems*

Bug ID	Summary	Explanation
CSCdv83022	The Scheduler icon does not appear in the Windows status bar under a terminal service session.	This situation is normal. If you need to access features from the Schedule icon, you must do so from the computer on which the Scheduler is installed.

**Table 6** *Cisco CRA Historical Reports Known Problems (continued)*

Bug ID	Summary	Explanation
CSCdv83312	When printing a historical report on a computer running Windows98, the Print dialog box displays an incorrect printer.	This problem occurs when you have changed the default printer while CRA Historical Reports is running and have not exited and restarted CRA Historical Reports.  To solve this problem, exit and restart CRA Historical Reports.
CSCdx93788	An incorrect version number appears in the About Cisco CRA Historical Reports window.	The version of Cisco CRA Historical Report Client appears incorrectly as 3.0(0.xx) instead of as 3.0(1.0). This inconsistency can cause a problem if you upgrade CRA Historical Reports without uninstalling your existing version.  CRA Historical Reports client version 3.0(0.0) is the version released with CRA Release 3.0(1.0).  Before upgrading CRA Historical Reports, make sure to uninstall your existing version, unless the existing version shows 3.0(0.0).  <b>Note:</b> The version number will still appear incorrectly after an upgrade.

## Cisco CRA Installation Known Problems

**Table 7** *Cisco CRA Installation Known Problems*

Bug ID	Summary	Explanation
CSCdv34333	An error message appears when you are installing the CRA Editor or the ICD Agent Desktop.	The message <code>Authenticode signature not found</code> appears when you are installing the CRA Editor or the ICD Agent Desktop. This message does not affect the installation and can be ignored.
CSCdx26771	Adobe Acrobat Reader is not installed.	The Adobe Acrobat Reader is not installed by the CRA installation program. To use Adobe Acrobat Reader to access CRA documentation in PDF format, you must install this program.

Table 7 Cisco CRA Installation Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx70798	Cannot install CRA on a computer on which Active Directory is running.	<p>Installation of CRA on a computer running Active Directory will fail.</p> <p>To work around this problem, move Active Directory to another computer.</p>
CSCdx83194	A message regarding memory requirements appears during installation.	<p>During installation of CRA Release 3.0, Cisco Extended Services, or Nuance applications, the following message appears, where <i>Product</i> is the product you are installing and <i>Server</i> is the server on which you are installing. This message only appears if you try to install a product on a server with less than 512 MB of memory, but it should appear if you try to install a product on a computer with less than 1 GB of memory. In addition, “512 MB” should appear as “1 GB.”</p> <p><i>Product</i> running on a <i>Server</i> requires at least 512 MB of RAM. If you continue, the memory must be upgraded in order to support <i>Product</i></p> <p><b>Note:</b> You should not install CRA Release 3.0, Cisco Extended Services, or Nuance applications on a computer with less than 1 GB of memory.</p>
CSCdx87425	When you try to install more than one language as a language's group default (for example, es_US and en_GB), the user prompt directory of one language overwrites the user prompt directory of the other.	Only the combination of the languages es_US and es_MX are supported in the current CRA release.

Table 7 Cisco CRA Installation Known Problems (continued)

Bug ID	Summary	Explanation
CSCdy24491	CRA databases grow larger than 256 MB.	<p data-bbox="599 297 1220 483">Occasionally, the CRA installation program may not set the maximum size of the SQL database to 256 MB, as it should. In this situation, the CRA databases can grow large enough to affect system performance. For example, there may be an increase in the abandoned call rate, and agents may be logged off while running a report.</p> <p data-bbox="599 500 1184 557">To work around this problem, check whether MSDE max server memory is set to 256 as follows:</p> <ol data-bbox="606 573 1204 670" style="list-style-type: none"> <li data-bbox="606 573 1204 670">1. Open a Command window and type the following commands, where <i>sa_password</i> is the database password: <pre data-bbox="646 686 1112 906"> <b>osql -Usa -Psa_password</b> <b>sp_configure 'show advanced option', 1</b> <b>go</b> <b>reconfigure</b> <b>go</b> <b>sp_configure</b> <b>go</b> </pre> </li> <li data-bbox="606 922 1220 1011">2. Check that the value in the <code>config_value</code> column for max server memory is 256. If it is not, type the following commands: <pre data-bbox="646 1027 1116 1312"> <b>sp_configure 'show advanced option', 1</b> <b>go</b> <b>reconfigure</b> <b>go</b> <b>sp_configure 'max server memory', 256</b> <b>go</b> <b>reconfigure</b> <b>go</b> <b>quit</b> </pre> </li> </ol>

## Cisco CRA Serviceability Known Problems

*Table 8 Cisco CRA Upgrade Known Problems*

Bug ID	Summary	Explanation
CSCdx59653	CiscoWorks 2000 does not receive SNMP information.	CiscoWorks 2000 will not receive SNMP information from a CRA server that is running OS version 2000.2.1.  To work around this problem, from the Windows Services Window, right-click SNMP Service in the list of services, click <b>Properties</b> , click the <b>Security</b> tab in the SNMP Service Properties window, and set the Public Community Rights to READ ONLY.

## Cisco CRA Upgrade Known Problems

*Table 9 Cisco CRA Upgrade Known Problems*

Bug ID	Summary	Explanation
CSCdv38726	The migration of JSP Pages in CRA 3.0 is not supported.	When migrating JSP pages from MS JVM to Java 2 VM, the JSP pages may not be compatible with Java2 JVM.
CSCdw63489	A Cisco Script application does not have an application ID.	You have used the Conversion tool to convert a 2.x Cisco Script application to CRA 3.0 and the application ID does not exist in the 2.x script. If an application does not have an ID, the application will run, but you will not be able to make changes to the application.  To work around this problem, enter a unique ID for the application in the ID field in the Cisco Script Application web page and click <b>Update</b> .
CSCdx72712	The CRA Engine must be restarted after converting scripts.	If you upgrade from CRA release 2.x to CRA Release 3.0 and use the convert tool to upgrade configuration and repository profiles in the LDAP directory, you must stop and then restart the CRA Engine so that the converted scripts work properly.

## Cisco Integrated Contact Distribution (ICD) Known Problems

*Table 10 Cisco ICD Known Problems*

Bug ID	Summary	Explanation
CSCdw29924	After failover, the Cisco Agent Desktop displays an error.	<p>On a media terminated Cisco Agent Desktop, the message <code>Unable to start Media termination</code> appears when you log in after failover from one Cisco CallManager server to another.</p> <p>If this situation occurs, you must wait until the Cisco CallManager falls back to the original server.</p>
CSCdw86071	The Cisco Agent Desktop or Cisco Supervisor Desktop can not find the file JVM.dll.	<p>Installing the Cisco Agent Desktop or Cisco Supervisor Desktop on a CRA server is not supported.</p> <p>If the Cisco Agent Desktop or Cisco Supervisor Desktop is installed on a CRA server with ICD, the Cisco Agent Desktop may not be able to find the file JVM.dll.</p>
CSCdw90047	The Cisco Enhanced Supervisor Desktop generates an error when it starts.	<p>Installing the Cisco Agent Desktop or Cisco Supervisor Desktop on a CRA server is not supported.</p> <p>If you try to install the Cisco Enhanced Supervisor Desktop on a CRA server, the following message will appear in the Installation web page.</p> <pre>Could not read license file \\benito\desktop_cfg\license\ enhanceds\LicenseFile.</pre>
CSCdx20809	Caller ID information in the Cisco Agent Desktop Enterprise Data window is garbled.	<p>Occasionally, after a call is conferenced, caller ID information in the Cisco Agent Desktop Enterprise Data window appears garbled.</p> <p>The correct Caller ID information will appear for the following call.</p>

Table 10 Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx34615	The system returns an expected wait time (EWT) of -1 when there is not enough information to calculate EWT.	<p>The algorithm to calculate the expected wait time (EWT) of a contact in a CSQ is as follows:</p> <p>A CSQ's EWT = (Position of contact in queue * CSQ's average talk time) / Total number of working resources in CSQ.</p> <p>The total number of working resources in CSQ = the sum of all resources in Reserved state, Talking state, and Work state.</p> <p>If contact is not queued, the position in queue = length of queue + 1.</p> <p><b>Note:</b> If either the CSQ's average Talk time or the total number of working resources is 0, the EWT is -1.</p>
CSCdx37386	An agent stays in the Reserved state for five seconds after a call is disconnected.	When a caller routed to an agent is disconnected while the agent's phone is ringing, the agent stays in the Reserved state for five seconds after the phone stops ringing. The agent then goes back to Ready or Not Ready state, depending on the auto available setting for the agent.
CSCdx43820	The Cisco Agent Desktop logs an agent out and displays an error message even though the Cisco CallManager is not off line.	The Cisco Agent Desktop unexpectedly logs an agent out and the message <code>CM offline</code> appears, but the Cisco CallManager is still running. This situation can occur intermittently. When you log back in to the Cisco Agent Desktop, the system will function normally.

Table 10 Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx44389	An Agent remains in Talking state or a call remains in queue.	<p data-bbox="599 297 1188 350">An agent can remain in talking state in the following situations:</p> <ul data-bbox="612 375 1217 951" style="list-style-type: none"> <li data-bbox="612 375 1217 586">• An agent is in Ready state and an ICD call is routed to that agent. The agent goes to Reserved state and, while the telephone is ringing, failover causes the agent to be logged off. The call goes back into queue. An agent (the original agent or another agent) logs in and answers the call. That agent will remain in Talking state after completing the call.</li> <li data-bbox="612 610 1217 951">• An agent is in Ready state and an ICD call is routed to that agent. The agent goes to Reserved state and, while the telephone is ringing, the agent closes the Cisco Agent Desktop. While the telephone is still ringing and the agent is still in Reserved state, the agent logs back in and answers the call. The agent will remain in Talking state when the call ends. In addition, if the first agent does not answer the call and the call is picked up by another agent, the other agent will remain in Talking state after completing the call.</li> </ul> <p data-bbox="599 976 1217 1252">A call can remain in queue if an agent is in Ready state and an ICD call is routed to that agent. The agent goes to Reserved state and, while the telephone is ringing, the agent closes the Cisco Agent Desktop and does not answer the call. There are no other agents in Ready state. Then another agent goes into Ready state but the call does not get routed to an agent. Real-time reporting will show 0 calls in queue and the call will remain in the queue until the caller disconnects.</p> <p data-bbox="599 1276 1217 1357">To prevent these problems, agents should not exit the system by clicking the Windows <b>Close</b> button while in Reserved state.</p>

Table 10 Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx46287	A call becomes stuck in queue.	<p>It is possible for a call to get stuck in queue if the caller or an agent disconnects the call when the call is transferred to an agent. This problem rarely occurs.</p> <p>The are two symptoms of this problem:</p> <ul style="list-style-type: none"> <li>• The number of contacts waiting shown in the overall statistics and in the CSQ report is wrong. If an ICD call is stuck in queue, the statistics and report will show one extra contact waiting, even if all calls are gone.</li> <li>• The agent who handled the call will remain in Talking state after the agent disconnects the call.</li> </ul> <p>To remove a call stuck in queue, stop and then restart the CRA Engine.</p> <p>To get out of Talking state, the agent should log off and log back in.</p>
CSCdx46599	A call transferred from an agent using Softphone to another agent is not treated as a Cisco ICD call.	When an agent answers a call on Softphone and transfers the call to another agent, the CRA system does not treat the call as an ICD call. This situation occurs because the Softphone implements a call transfer as a call redirect.
CSCdx46616	An agent cannot go to Ready state after a fallback.	<p>An agent cannot go to Ready state on the Cisco Agent Desktop after a Cisco CallManager fallback occurs. (The agent can log in successfully.)</p> <p>To work around this problem, reset the IP phone associated with the ICD extension of the agent. Then the agent can log back in and go to Ready state.</p>

Table 10 Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx46617	An agent goes into an incorrect state and some statistics for a call are incorrect when a call is redirected to an ICD route point.	<p>When a call is redirected to an ICD route point from a script, an agent's states do not change as normal. In addition, the real-time statistics for the call are incorrect. The overall ICD statistics consider this call to be abandoned. The Contact Service Queue statistics consider it to be dequeued. The agent statistics consider the call to be presented to the agent but not handled.</p> <p>You can work around for this problem in either of the following ways:</p> <ul style="list-style-type: none"> <li>• Introduce a delay of at least five seconds in the ICD script before queuing the call. The script can include a Delay step, play prompts, or use another technique that will cause the delay.</li> <li>• Add a Set Contact Info step in the Successful branch of the Redirect step of the first script. In the Set Contact Info step, set the contact to Handled.</li> </ul>
CSCdx51913	When an agent is transferred to an ICD script, some information is not recorded in the CRA database.	<p>In the following situation, a Contact Call Detail Record and a Contact Routing Detail Record will not be created in the CRA database:</p> <ol style="list-style-type: none"> <li>1. An agent calls into an ICD application and is routed to a second agent.</li> <li>2. The second agent then transfers the first agent to another application, and the second agent completes the transfer as soon as the application answers the call.</li> </ol> <p>To prevent this problem, if you are an agent, do not transfer another agent to an application.</p>
CSCdx54176	Some historical reports show incorrect log in durations for certain agents.	When the CRA Engine is not shut down properly (for example, by restarting the computer while the CRA Engine is running), the log in duration shown for some agents is incorrect in some historical reports.

Table 10 Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx55612	The Cisco Agent Desktop runs slowly for a short time.	The Cisco Agent Desktop can run slowly if the Cisco Agent Desktop logging is turned on and the log file is configured to be very large. When the log file reaches its maximum size, the system automatically copies it to a backup file. The system runs slowly during this copy operation. For example, if the system is programmed to answer calls automatically, it may not answer a call.
CSCdx59816	After installing the CRA system, the Cisco IP Phone Agent is not automatically available.	<p>The Cisco IP Phone Agent may not be available after you install the CRA system because the Cisco CallManager XML services for JSP agent are not installed automatically during the installation.</p> <p>Instructions for enabling the IP Phone service are available in the Call Manager On-Line help at the following URL, where CRA Server Address is the host name of IP address of your CRA server:</p> <p><a href="http://CRA Server address:6293/ipphone/jsp/sciphonexml/IPAgentInitial.jsp">http://CRA Server address:6293/ipphone/jsp/sciphonexml/IPAgentInitial.jsp</a></p>
CSCdx70804	An message indicating that you have selected an existing configuration appears when you install the Cisco Desktop Administrator.	<p>The following message can appear during installation of the Cisco Desktop Administrator:</p> <p>You Have selected an existing configuration. Are you sure you want to share this configuration with other Administrator?</p> <p>If you receive this message, click <b>Yes</b> to continue the installation.</p>
CSCdx71820	Using the <b>Avvid_Save</b> , <b>Cleandsa</b> , and <b>Avvid_Restore</b> commands do not restore ICD data.	<p>Spanlink LDAP configuration information in the DC Directory is not restored when you use the <b>Avvid_save</b>, <b>Cleandsa</b>, and <b>Avvid_restore</b> commands.</p> <p>To save and restore the DC Directory, use the <b>avvid_migrate_save</b> and <b>avvid_migrate_restore</b> commands.</p>

Table 10 Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx72781	ICD does not function with Extension Mobility.	<p>When different agents use Extension Mobility to share one agent desktop, each agent must manually modify the PhoneDev.ini file to reflect the agent's correct ICD extension.</p> <p>The PhoneDev.ini file is stored in the Program Files\Cisco\Desktop\config directory.</p>
CSCdx77518	Columns in the Cisco Agent Desktop Enterprise Data window are minimized.	<p>On computers running the Windows98 operating system, columns in the Cisco Agent Desktop Enterprise Data window may appear minimized.</p> <p>To expand a minimized column, drag the border of the column.</p>
CSCdx77742	Cisco Supervisor Desktop displays multiple simultaneous calls for a single agent.	<p>The following problems can occur intermittently:</p> <ul style="list-style-type: none"> <li>The Cisco Supervisor Desktop shows an agent has calls when there are no calls. The calls remain on the screen indefinitely.</li> </ul> <p>To work around this problem, the agent whose calls appear on the Cisco Supervisor Desktop should log out and log back in.</p> <ul style="list-style-type: none"> <li>A Cisco IP phone agent appears on the Cisco Supervisor Desktop even though the agent is not logged in.</li> </ul> <p>To work around this problem, the Cisco IP phone agent should log out and then log back in.</p>
CSCdx87076	An agent receives an error message when trying to log in to the Cisco Agent Desktop.	<p>An agent cannot log in to the Cisco Agent Desktop and the message <code>CM Offline</code> appears even though the Cisco CallManager is operating normally. This problem can occur when the Cisco CallManager to which the telephone of an agent is homed is very busy, or when the Cisco CTIManager used by the Cisco Agent Desktop is very busy.</p> <p>To work around this problem, exit and restart the Cisco Agent Desktop.</p>

**Table 10** Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx88988	The Cisco Agent Desktop Enterprise Data window displays incorrect call information.	Intermittently, the Enterprise Data window for an old call remains even if new calls come in, and the call duration displayed in this window continues to increase.  To work around this problem, close the Cisco Agent Desktop and then open it again.
CSCdx89938	When using third-party directory services, the full name (first and last name) of an agent does not appear in the CRA Administration ICD Resource web page.	When a Cisco CallManager user is created with a third-party tool such as Active Directory or Netscape Directory Console and is updated from the Cisco CallManager Administrator web pages, the full name of the agent does not appear on the CRA Administration Resource web page. Also, agents do not appear properly on the Cisco Desktop Administrator.  To work around this problem, populate the ciscoCCNatProfileOwner attribute in the ccn-profile object with the user Naming attribute. Alternatively, you can create the user from the Cisco CallManager Administrator web pages.
CSCdx90332	Updating a network interface card driver disables silent monitoring and recording.	Occasionally, after you update a network interface card driver, the Cisco Agent Desktop and Cisco Supervisor Desktop Silent Monitoring and Recording features no longer work.  To work around this problem, reinstall the Cisco Agent Desktop VoIP Monitor server.
CSCdx90378	Silent monitoring and recording may not work with Extension Mobility.	When the Extension Mobility feature of the Cisco CallManager is enabled, the silent monitoring and call recording features of Cisco Agent Desktop and Cisco Supervisor Desktop may not work.

Table 10 Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx91030	Users cannot log in to the Cisco Agent Desktop or Cisco Supervisor Desktop under Windows XP.	<p>Users are not able to log in to the Cisco Agent Desktop or Cisco Supervisor Desktop on computers running Windows XP because the users do not have the appropriate permissions.</p> <p>To work around this problem, grant the Windows XP users group Read &amp; Execute and Read permissions to the following files and folders so that users without administrator privileges can run the software:</p> <p>Agent Files in the \Program Files\Cisco\Desktop\bin\ folder:</p> <p>fcICDClient.dll fcCTIClient.dll AgtStateLang.dll</p> <p>Supervisor Files \Program Files\Cisco\Desktop\bin\ folder:</p> <p>FCVoIPMonClient.dll Msvcirt.dll OpenH323.dll PTLib.dll</p> <p>Folders:</p> <p>\Program Files\Cisco\Desktop\config \Program Files\Cisco\Desktop\log</p>
CSCdx91579	The Called Number field is blank in the Called Number Summary Activity Report.	When call is placed to a script that redirects (using a Redirect step) the call to a logged-on agent, the Called Number field will be blank in the Called Number Summary Activity Report.
CSCdx92721	Cannot change agent state when using Extension Mobility.	<p>If an agent logs out of Extension Mobility while logged in to the Cisco Agent Desktop, the following message will appear on the Cisco Agent Desktop: <code>CM Offline, Device out of Service.</code></p> <p>To work around this problem, the agent should log out and then log back in to the Cisco Agent Desktop.</p>

Table 10 Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdx93748	Error message appears when starting Cisco Agent Desktop or the Cisco Supervisor Desktop	<p>If the first time the Cisco Agent Desktop or the Cisco Supervisor Desktop was started, it was started by a user with administrator privileges, the following message will each subsequent time the program is started by users without administrator privileges. This message will appear three times.</p> <p>Error writing to log file in the Cisco Desktop Suite Log directory, logging will be disabled.</p> <p>To work around this problem, a user with administrator privileges must delete the following files and folder:</p> <p>\Program Files\Cisco\Desktop\log\agent.log          \Program Files\Cisco\Desktop\log\agent.dbg          \Program Files\Cisco\Desktop\log\Old</p>
CSCdx94029	The oldest contact in queue is not correct in the Cisco Supervisor Desktop supervisor report.	<p>Occasionally, the oldest contact in queue statistic is not updated in the Cisco Supervisor Desktop reports. In this situation, this statistic shows 0 even though calls exist in queue.</p> <p>For up-to-date information, look at the oldest contact in queue statistic in the Cisco Agent Desktop Statistics window.</p>

Table 10 Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdy05580	ICD configuration data cannot be accessed after it is restored using the CRA Backup and Restore utility.	<p>After you restore data using the CRA Backup and Restore utility, you will be unable to access ICD configuration data because the database user access rights are not restored properly.</p> <p>To work around this problem, open a Command window and type the following commands, where <i>sa_password</i> is the database password. You must perform these steps each time you restore ICD configuration data.</p> <pre> osql -Usa -Psa_password USE db_cra GO EXEC sp_changedbowner 'db_cra' GO USE db_cra_ccdr GO EXEC sp_changedbowner 'db_cra' GO USE SchedulerDb GO EXEC sp_changedbowner 'SchedulerUser' GO </pre>
CSCdy13291	Cisco Agent Desktop shows calls in queue when there are no calls in queue.	<p>In the following situation, the Cisco Agent Desktop will show calls in queue even if there are no calls in queue:</p> <p>Non-agent caller A calls non-agent B. B transfers caller A to an ICD application and completes the transfer before the call is queued.</p> <p>To reset the calls in queue statistics, stop and restart the CRA Engine.</p>

**Table 10** Cisco ICD Known Problems (continued)

Bug ID	Summary	Explanation
CSCdy35520	Silent Monitoring and Recording does not work when an agent is using a Cisco IP Softphone.	<p>When an agent is using a Cisco IP Softphone as the agent device, Silent Monitoring and Recording does not work.</p> <p>To work around this problem, in the Cisco CallManager Administration web page for the Softphone CTI port, configure the CTI port Device Name to be “SEP” followed by the MAC address of the Softphone PC. The MAC address must be in capital letters.</p>

## Media-Related Known Problems

**Table 11** Media-Related Known Problems

Bug ID	Summary	Explanation
CSCdx80274	A CTI port becomes unavailable.	<p>If a voice prompt file on a hard disk becomes corrupted, a CTI port may become unavailable for calls. If this problem happens more than once, the CRA Engine will detect the error and restart automatically.</p> <p>To work around this problem, install the latest Service Pack, which is available from CCO.</p>
CSCdx83747	The FlushInputBuffer flag in media steps is ignored.	<p>Even though the FlushInputBuffer flag is configured to No and the Barge-In flag is also configured to No, if DTMF digits exists in the DTMF buffer, the initial prompts of a media step will not be played.</p> <p>To work around this problem, install the latest Service Pack, which is available from CCO.</p>

## Text to Speech (TTS) Known Problems

*Table 12 Cisco CRA TTS Known Problems*

Bug ID	Summary	Explanation
CSCdw80955	Text playback using TTS causes unexpected results.	<p>The current TTS technology requires that you be aware of how a prompt text is processed. If you do not implement TTS correctly, you may experience unexpected results. When implementing TTS, make sure to follow the guidelines in the Nuance Vocalizer Developer's Guide, which you can find in the following directory on your speech server:</p> <p>C:\Program Files\Nuance\Vocalizer\doc</p>
CSCdx05558	Response time may slow under heavy loads.	<p>Occasionally TTS prompts may respond slowly. The problem generally occurs when the Nuance speech server, the CRA server, the Gateway, or the network is operating under heavy load.</p> <p>To work around this problem, identify and correct any network problems. In addition, if you are using VoiceXML, you can work around this problem as follows:</p> <ul style="list-style-type: none"> <li>• Reduce the complexity of the grammars used in the VoiceXML application.</li> <li>• Remove the reference to Document Type Definition (DTD) in the VoiceXML application.</li> <li>• Use local .wav, grammar, and VoiceXML files instead of files on another server.</li> </ul>
CSCdx53796	Long TTS prompts consume significant memory on the CRA server.	<p>Long text files will increase memory usage on the CRA server. For example, a 5 KB text file requires a 2.5 MB audio file. On a system with 40 TTS ports, the scenario consumed approximately 120MBof memory. If you will be using long text files for TTSA, make sure to provision your system appropriately.</p>

Table 12 Cisco CRA TTS Known Problems (continued)

Bug ID	Summary	Explanation
CSCdy00910	A timeout in the DBRead step takes longer than specified if the database server is down.	<p>A script that includes the DBRead step can experience a longer timeout than the timeout specified if the database configured for the Database subsystem is down.</p> <p>To work around this problem, follow these steps:</p> <ol style="list-style-type: none"> <li>1. Use a Windows editor to open the SubsystemEDBS.properties file, which is located in the directory in which you installed the CRA system.</li> <li>2. Set the following parameter to the number of seconds that the DBRead step should wait before it times out. If you set this parameter to 0 (the default), the timeout will be default time used by the database ODBC driver. <code>com.cisco.wf.subsystems.edbs.LoginTimeout</code></li> <li>3. Stop and restart the CRA Engine.</li> </ol>

## Obtaining Documentation

These sections explain how to obtain documentation from Cisco Systems.

### World Wide Web

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

<http://www.cisco.com>

Translated documentation is available at the following URL:

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

## Documentation CD-ROM

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

## Ordering Documentation

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

[http://www.cisco.com/cgi-bin/order/order\\_root.pl](http://www.cisco.com/cgi-bin/order/order_root.pl)

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

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

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

## Documentation Feedback

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

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

We appreciate your comments.

## Obtaining Technical Assistance

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### Technical Assistance Center

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

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

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

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

## Cisco TAC Web Site

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

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

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

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

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

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

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

## Cisco TAC Escalation Center

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

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

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

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

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